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SOUTH BRANDYWINE PARK—DIFFICULT STRETCH OF SEWER LOCATION

REINFORCED CONCRETE INTERCEPTING SEWER

Constructed at Wilmington, Del.—Old Sewer Burst by Excessive Pressure—Difficulties of Location and Construction—Making and Laying Concrete Pipes—Bridge and Inverted Siphon at Stream Crossings

BY ALEXANDER J. TAYLOR, ENGINEER IN CHARGE OF SEWERS

Paper read before American Society of Municipal Improvements.

THE water supply of the City of Wilmington, Del., is obtained wholly from the Brandywine Creek, a decidedly erratic stream, draining a country approximating in area three hundred and fifty square miles. The intake and the stream above it, for a distance of a mile and a half, lies within the limits of the municipality. The preservation of its waters in as pure a state as possible, and the prevention of additional pollution to the stream have ever been a matter of grave consideration for the authorities. The safeguards, at present, consist of an intercepting sewer skirting the southern

and more inhabited slope; this being extended from time to time further up stream to meet the requirements of a growing population and to care for the increased amount of refuse from the many enlarged mill properties bordering upon the creek. In addition a daily patrol has been established and kept in service.

Lately, the large demands from these properties, unexpected at the time of designing, and from the increased settlement of the contributing territory, have resulted in overtaxing the capacity of the sewer during periods of maximum flow, frequently causing it to run

under pressure, lifting the manhole covers from their frames and overflowing into the creek with a resulting contamination of the city's drinking water.

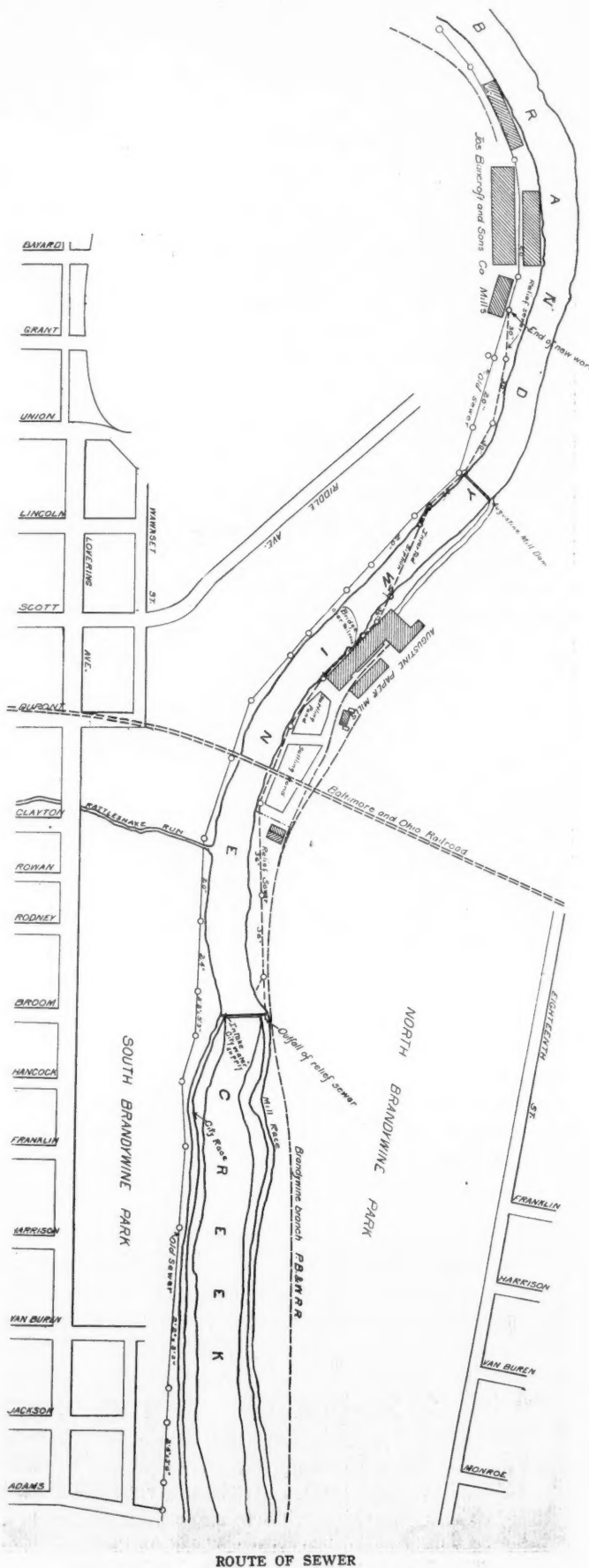
It may be interesting to note, in passing, that the sewer upon being subjected to the maximum head of ten feet has cracked in numerous places at its weakest point, where it is built of twenty-inch standard terra cotta pipe. The cracks are variously located from the springing line to the crown and occur more frequently at the bell than at the spigot end. There seems to be no question from the available records but that the materials and the workmanship employed were the best procurable; that the sewer was laid under able supervision by the Street and Sewer Department's own men with an efficient inspection by the Water Department of the city, which, of course, was vitally interested in securing good work. Temporary repairs have been made from time to time by encasing the broken parts in concrete, with the result of causing fresh breaks to appear in other sections.

This at last becoming intolerable, a permanent remedy was sought and found in the building of a relief sewer, whose outlet is located just within the head gates of a race taking water from the same dam as does that of the city supply, but situated on the opposite side of the Creek. From here the relief sewer's course lies along the water's edge, running for quite a distance in a narrow strip of land between the Creek and some settling ponds, then along the Creek wall of a paper mill, crossing their tail race where sixty feet wide, then over the Creek by an inverted siphon, then paralleling the present sewer for a distance of about nine hundred feet and joining it just below a large cotton mill. A portion of its length will be available for the intercepting sewer on the northern bank when conditions demand its construction. The total length of the new work comprises eighteen hundred feet of thirty-six inch and thirteen hundred feet of thirty inch pipe.

As a guide in determining the quantity of sewage for which to provide, observations were taken on the velocity in the present sewer by means of floats, and the results obtained used in conjunction with the areas of the wetted sections to calculate the average volume passing. From similar observations, in addition to weir measurements, the quantity of liquid refuse to be taken from the various mills, whether present or future contributors, was estimated. Rain water was carefully excluded and in the upper district an auxiliary storm water sewer was built to further this project. From a consideration of these factors and with an extra percentage for future increments, the sizes as indicated above were determined.

It is confidently expected that not only will the capacity of the sewer below the junction of the old and the new lines be increased by the additional facilities provided, but also that the portion now in service above this point will carry a greater volume, due to the decreased friction secured by cutting off a long line of smaller pipe and thus put off for several years the further extension of the relief work. This additional capacity would be approximately a gain of thirty per cent.

In deciding upon the character and the material from which the structure should be built, terra cotta pipe, monolithic concrete and brick were each rejected in turn from considerations of economy and ease of construction, and a decision made in favor of reinforced



concrete pipes with curves of brick where angles occur. The points adverse to the use of such a pipe were considered and disposed of as follows: The character of the sewage for quite a considerable portion of the course is acidulous, in consequence of which there were fears of a softening or solvent action upon the concrete composing the pipe. As an experiment a portion of a condemned pipe was immersed in representative sewage and allowed to remain for ten months without showing any alteration. A further safeguard to the lower portion of the sewer consists in its receiving the lime water from a paper mill in quantity probably sufficient to neutralize the acid, while the latter in turn may be expected to prevent any lime incrustations.

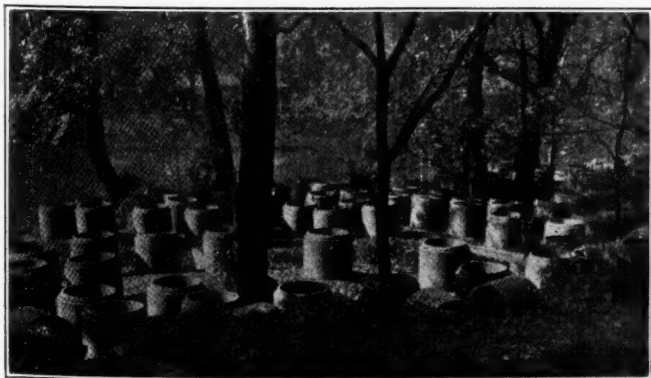
The reinforced concrete pipes were made by the regular sewer workmen in immediate proximity to where they were to be laid, the mixing boards being moved every morning before starting work. Probably every one is familiar with their construction, but an outline of the work may not be amiss. The concrete was mixed in the proportion of one part Portland cement, three parts sand and stone dust combined, and four parts three-quarter inch stone. This resulted in forming a mass possessing compactness as well as strength. The pipe being exposed on all sides after completion, ample opportunities were presented to judge of this. The sections are three feet in length, varying in thickness from $3\frac{1}{2}$ inches for the thirty-inch to 4 inches for the thirty-six-inch pipe, and are reinforced with two circumferential bands, $\frac{1}{8}$ inch by $1\frac{1}{2}$ inch, placed one foot apart and one foot from each end. These are slotted to allow five longitudinal bars to be threaded through them. These longitudinal bars extend beyond the shoulders of the pipe and are hooked at the ends to provide for interlocking the various sections, after the latter are placed in position, by means of an additional circumferential band slipped through the hooks. Steel forms with an outer and inner ring were used, each being in three separate pieces which were joined together when set up on the cast-iron bed plate. The pipe was cast in a vertical position with the bell end down. The bottom ring is first placed in position, levelled and greased, the wall forms, previously oiled, are next slipped into position and latched, sliding on grooves in the bottom ring. The longitudinal reinforcing bars are then set in position, their lower hooked ends entering into depressions made in the lower rings to receive them. At the upper end these bars are

caught and held in position by clamps, which serve in addition to keep the wall forms the proper distance apart. A stiffening band is slipped inside of and hung upon the upper end of the inner cylinder to prevent distortion of it. Each mold, when set up and braced, is an exact duplicate of the others, so the finished sections must fit when joined.

The concrete must be carefully tamped in layers not exceeding two or three inches in depth, or the unconsolidated portions will show and form weak spots in the completed work. When one foot of concrete has been deposited and rammed, the clamps on the longitudinal bars are removed temporarily, a circumferential band slipped over them down to the concrete, the clamps replaced and concreting resumed. After another foot in height is completed a second circumferential band is similarly placed. When the upper end of the pipe is reached, a cast-iron collar having a section that will mold a spigot end is placed in position, filled with concrete, smoothed with a small trowel, and the pipe is finished. The forms were removed the following day, but the sections were allowed to sit on the iron base plate for five days before being turned over, being kept damp by repeated sprayings during this period. They were allowed to stand and cure for at least two weeks before being handled to any extent or placed in the trench.

Lowering them into the trench was accomplished by means of a movable wooden tripod from which was suspended a triplex chain hoist of one ton capacity, the heavier pipe weighing approximately fifteen hundred pounds per length. The laying of the pipe can be readily and rapidly done. The whole secret, if there be one, consists in having the bottom of the trench carefully prepared to the proper depth in advance; and in having each pipe laid accurately to line and grade so that the succeeding sections may fit perfectly, any inaccuracy in this regard making itself perceptible for several lengths. When a pipe has been placed in position the tie bands are slipped through the hooked ends of the longitudinal bars, locking the various pipes together; then a band of galvanized iron is fitted snugly around the outside of the pipes at their junction and the joint within grouted. The bands are pulled out as soon as the cement has set.

Conditions at the outlet render it essential, when repair work is in progress in the mill race, to temporarily by-pass the sewage through an open ditch around the head gates and into the creek below the dam. For this purpose a baffle gate, set in a concrete chamber three feet by three feet in section, was constructed from the ordinary 2 x 12-inch hemlock lumber around the work. It is eight feet long by three feet high and when closed lies flush against the sidewall, closing the by-pass opening; when opened it is swung across the chamber at an angle of thirty degrees with the side, opening the by-pass and closing the straight run. This gate is swung from three 12-inch strap hinges and held up to a clearance of one-eighth of an inch from the bottom, being supported at the outer end by a trolley wheel running on a curved piece of $\frac{1}{8}$ x $1\frac{1}{2}$ -inch bar iron set on edge in the concrete.



REINFORCED CONCRETE PIPE UNDER CONSTRUCTION

Above this point for several hundred feet the difficulties were chiefly a question of location, for this lay wholly in a piece of woodland under the care of the Park Commission, in consequence of which considerable maneuvering was necessary to get a suitable line and avoid tree cutting; however, at last, everything worked smoothly.

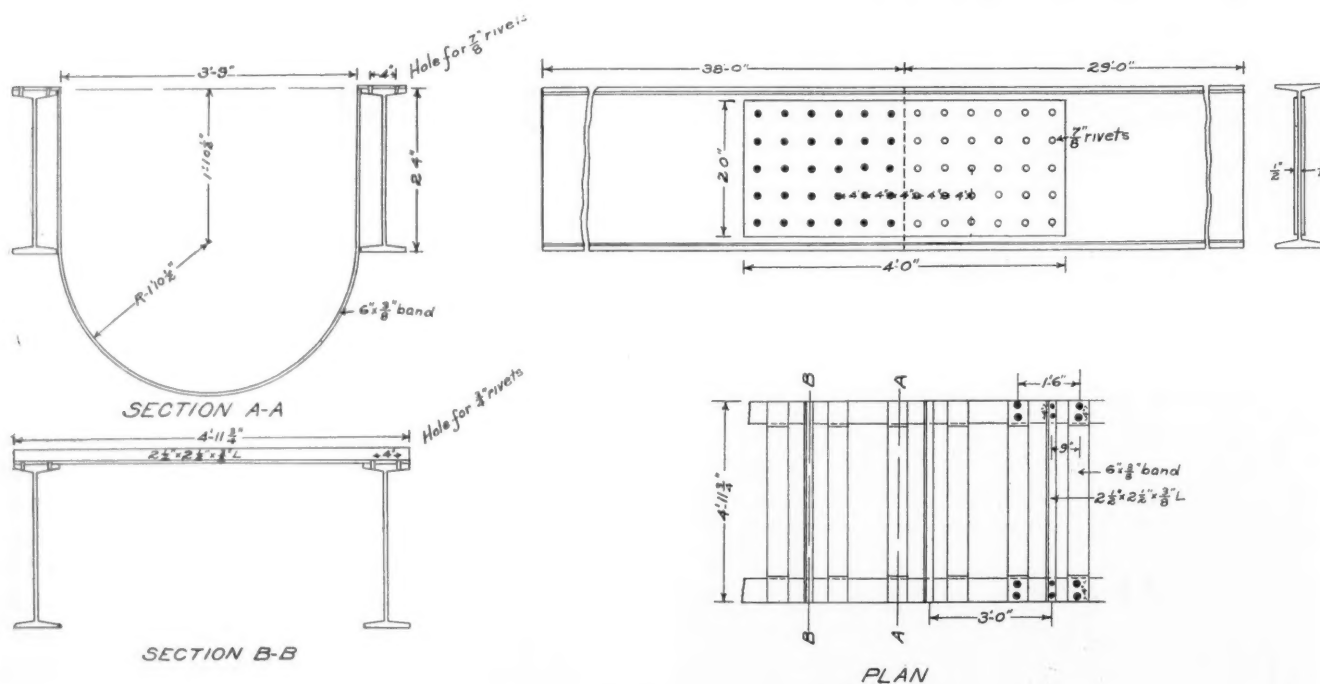
In the succeeding section we encountered the first real difficulty of the work; the line ran through the slope of an embankment of made ground, with settling ponds ten feet deep on one side and the Creek on the other, rendering close sheathing and heavy bracing necessary. The slope made one side of the ditch several feet below the other, so that the tripod could not be used in the regular way. To meet this difficulty, on the lower side there was built a platform, braced in position by 6 x 6-inch struts to the level of the upper bank, and upon this the tripod leg was slid as the work progressed, a strip being nailed on the platform to prevent the kicking out of the leg and the upsetting of the whole apparatus.

When the work had progressed as far as the creek wall of the paper mill, the location of the line within three feet of the wall rendered necessary the abandonment of the tripod because of lack of sufficient room in which to spread the legs. Instead there was used here an A frame of 6 x 6-inch timber with the upper end resting against the wall, the chain hoist hanging from a cross timber between the legs and sufficiently far down from the apex of the frame so as to be over the center line of the pipe. This proved to be a very clumsy device to move, and it was planned to put wheels on the two legs and also at the top where the frame rested against the wall. For various reasons this was delayed and was never done and all the pipe in this section was laid with the simple A frame, excepting that portion which crosses the tail race of the mill.

At this crossing the conditions forced the design within such narrow limits as not to allow of any other solution except that of carrying the sewer in the air, over the race, a span of sixty feet. Further limitations prevented the use of an arch however flat and necessitated some steel construction. Very fortunately the mill owners allowed the building of three small piers in the race, thereby quartering the span; but in the calculations these were disregarded entirely as there exists a probability, however remote, of their being swept out by the ice during some spring freshet. Some small protection is afforded them by extending the abutment walls of the race a small distance toward the creek. The final design consisted of two 24-inch I beams, with 6 x $\frac{3}{8}$ -inch bands, eighteen inches center to center, bent so as to fit over and riveted to the upper flange of the beams, and with the lower portion rounded to the half section of the outside of the pipe. Every three feet of their length the I beams are fastened together by $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{8}$ -inch L's riveted to their top flanges.

While it is expected that the joints will be tight and the pipe non-porous, an additional safeguard was provided in the shape of a trough formed by bending to the shape of the pipe sheets of No. 12 gauge black iron, 48 x 72 inches in size, and placing the same directly upon the iron bands and then fitting the pipe closely into the bent sheets. All the steel work was painted a uniform color.

The piers, although small, presented some constructive difficulties which were annoying. The water was about five feet deep with quite a strong current flowing, and there was not sufficient space in which to build water-tight coffer dams. The box moulds were built of 2 x 8-inch tongued and grooved N. C. pine pieces with their lower edges bevelled and driven hard on the rock bottom in an effort to make a tight joint and to ex-



MATERIAL - Manufacturers Standard Specifications

DETAILS OF BRIDGE OVER TAIL RACE

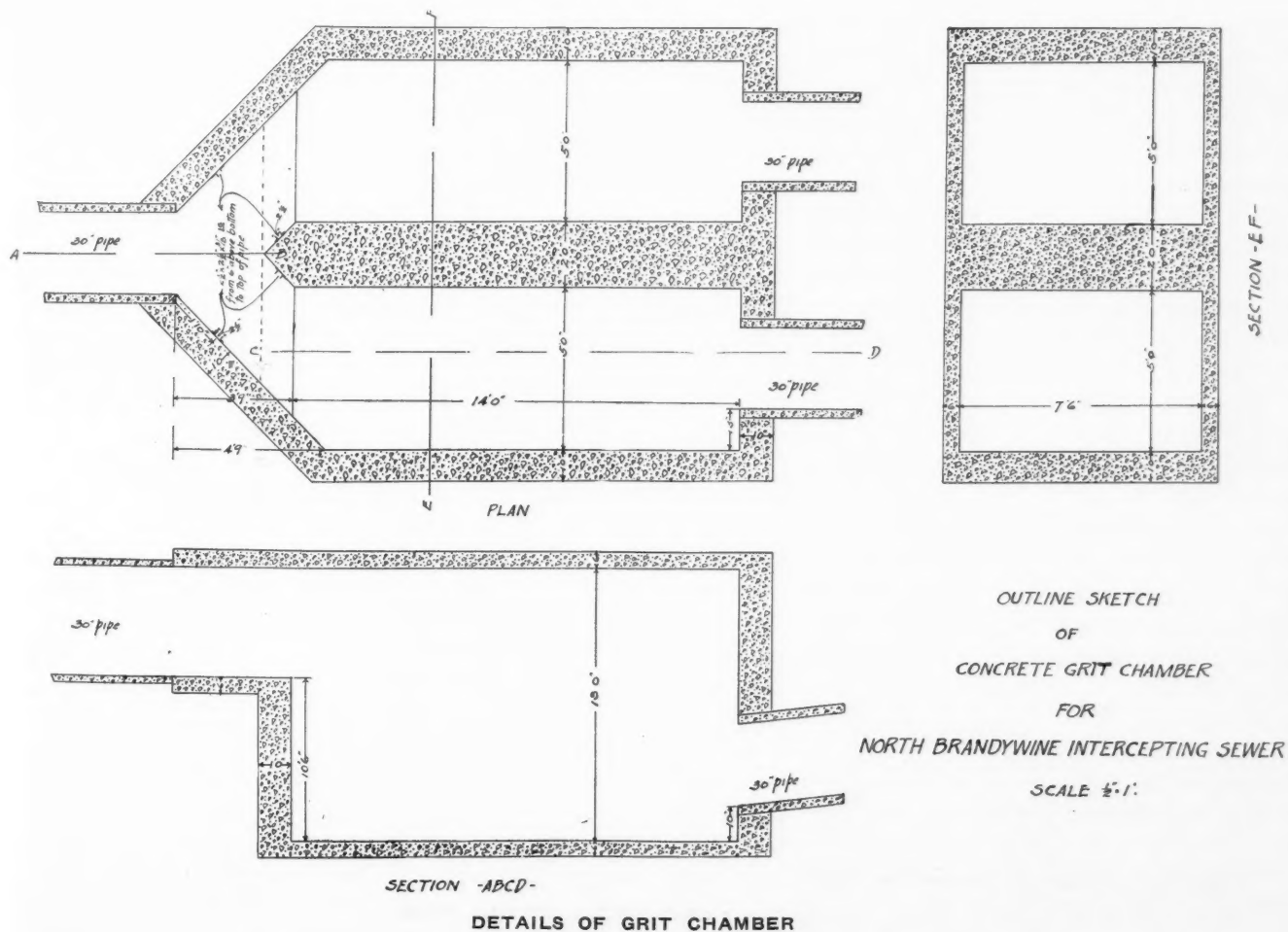
clude as much water as possible, but without any success in that line. Under these conditions good concrete work was secured by having the men stand in the water within the forms and, taking the concrete in buckets, dive under the surface and empty the buckets on the bottom or on the material already deposited, so as to prevent the separation of the mixture into its component parts; sufficient ramming was secured by the tramping around of the men. This was carried on in successive layers until the water surface was reached, above which the concrete was deposited from barrows in the usual way and rammed.

The steel work was placed easily by employing rollers on each pier. In laying the pipe at this point, both the tripod and the A frame had to be discarded for the only available footing was the top flanges of the two 24-inch I beams spaced four feet center to center. There therefore was employed two cross frames fifteen feet apart, supporting an 8 x 8-inch horizontal hoisting timber from which hung the chain block. The frames were identical in design and consisted on each side of an upright 6 x 6-inch timber braced by two inclined strips of the same size, their lower ends being nailed to pieces of 2 x 6 securely bolted to the I beams, the upper ends of the posts being fastened together and braced by a cap of 6 x 6-inch timber upon which the hoisting timber rested.

The only other point of interest lies in the general outline of the inverted siphon, which deviated some-

what from the usual design, its profile bearing a striking resemblance to the edge of a saw. The regular grade of the 30-inch pipe was stopped about one hundred feet back from the upstream bank, where a vertical drop of ten and one-half feet was provided into a grit chamber which was fifteen feet in length and divided into two compartments. From this a double line of thirty-inch pipe led on an up grade of 2 per cent. for 85 feet to the edge of the water, ending in a man-hole with a single thirty-inch outlet. It is expected that any sediment contained in the sewage which would deposit in the pipe will do so at this section, on account of the lessened velocity due to the upgrade and the additional area of conduit provided by the double pipe. This can be readily cleaned by closing one pipe and is easy of access at times of both high and low water.

From here the profile was governed by topographical conditions and the character of the excavation, and consists of a down grade of 4 per cent. for 250 feet under the creek bottom and a final leg on an upgrade of 6 per cent.; this last being of the larger size or 36-inch pipe. Considerations of economy dictated this course, a saving being effected in pipe on account of not running a double line for the whole distance, a saving in excavation which was in solid granite, but the main saving being in time, advantage being taken of a short, dry season to do the work, which would have necessitated an expensive coffer dam if prolonged to a time of high water.



COST OF ELECTRIC PLANTS

Costs of Six Plants Analyzed and Discussed—Largely for Incandescent Lighting—Capacity Required for Street and Commercial Lighting

BY ALTON D. ADAMS

RECENT increase of efficiency in the electric arc and in the incandescent filament has largely reduced the cost of electric plants per lamp capacity. In the matter of arcs, the type best adapted for street lighting is operated with 320 watts, and gives better results in illumination than the enclosed alternating arc that consumes 480 watts, and very much better than the alternating arc that consumes 400 to 425 watts. The increase of efficiency in arcs has thus reduced the necessary capacity of generating plant by one-third per lamp, besides giving increased illumination with this smaller capacity.

Carbon filament incandescent lamps of the type in general use on the streets are rated at 3.5 watts per candle-power, or 112 watts for a 32-candle lamp, while the tungsten lamp of 32 candle-power consumes only 1.25 watts per candle, or 40 watts total, and the same increase of efficiency holds for lamps of other candle-powers. It follows, therefore, that the required capacity and cost of generating plant per lamp of given candle-power is only 36 per cent. as great per lamp with the tungsten as with the carbon filament. For commercial lighting, incandescent lamps with carbon filaments may be had that consume only 3 watts per candle-power, but even here the tungsten filament, at 1.25 watts per candle-power, requires only 42 per cent. as much generating capacity as the carbon per lamp of given candle-power.

Plants devoted exclusively to street lighting usually cost less per unit of capacity than plants for commercial lighting, because the street lighting plants are simpler, require less electric equipment at the station and along the line, and have a less weight of copper in the circuits than plants for commercial lighting per unit of capacity. A street lighting plant may be entirely separate from the plant that does the commercial lighting in the same city or town, with only a moderate duplication of equipment, as, in any event, at least a part of the station apparatus, as well as all of the circuits for street lamps, must usually be distinct from the equipment for commercial use.

The power required for street lighting is usually much less than that devoted to commercial electric service in the same city or town, and the moderate generating capacity required for street lamps is brought out clearly by a specific case. Taking, for example, 100 arc street lamps of the most efficient type, that operate

with 320 watts each, the power required at these lamps is a total of 32 kilowatts, and their demand on the operating station will be less than 40 kilowatts, with any reasonable line loss. Instead of these 100 arc lamps, the same power of 32 kilowatts will operate 800 tungsten incandescent lamps of 32 candle-power each, or 640 lamps of 40 candle-power, or 426 lamps of 60 candle-power each.

Assuming that the 100 arc lamps will be spaced 300 feet apart, they will extend along 30,000 feet, or 5.68 miles of streets, and two wires may be allowed for this entire length, though circuits can sometimes be so arranged that one wire per street is sufficient. Number 8 B. & S. gauge copper wire will be suitable for either the 320-watt arcs or the tungsten incandescent lamps. Poles to carry this wire and to support the lamps should be spaced somewhat less than 100 feet apart on an average, and 340 will be a safe number for the job. At the present time, the number 8 copper wire with weather proof insulation may be figured at 16 cents per pound, but the price of wire is subject to wide fluctuations. If the tungsten incandescent lamps are used instead of the arc, as is desirable in many cases, the tungsten lamps may be spaced along more than 30,000 feet of streets with an increased cost of line.

The building for the electric generating plant should be fireproof. Compound steam engines, or gas or oil engines should be used to drive the electric generators of 40 kilowatts total capacity, and oil engines will provide the cheapest power to operate in the majority of cases for small plants. Switches and indicating and recording meters should be mounted on marble boards.

For the above plant, including the building, generating equipment, lines and the 100 arc lamps, all erected complete and ready to operate, the total cost should not be over \$16,000 in the eastern half of the United States. If inferior apparatus and poor construction are adopted, this estimate of \$16,000 may be reduced by a large percentage, but the subsequent expense of operation will be much increased. The sum of \$16,000, representing the total cost of the above plant, corresponds to \$160 per connected arc street lamp, and to \$20 per 50 watts capacity of the electric generators, as per 32 candle-power tungsten lamp, if 800 of these lamps are used instead of the arcs.

Actual costs are recorded below for a number of electric plants that have been built for both street and commercial lighting and that represent a variety of conditions and equipments. The generating capacities of these plants are stated in 50-watt lamps, and it should be noted that 50 watts gives 16 candle-power in the type of carbon filament lamp used for commercial lighting, about 14 candle-power in the carbon lamp for street

CAPACITY AND SERVICE OF SIX PLANTS, WITH TOTAL COSTS

Capacity of Generators in 50-watt Lamps.	Total Cost of Plant	Feet of Line Wire.	No. Inc. Street Lamps.	Inc. St. Watts per Lamp.	No. Arc Street Lamps.	No. 50-watt Commercial Lamps.	Cost per 50-watt-Cap. of Generators.
3,600	\$49,081	266,640	576	112	0	about 1,000	\$13.63
3,600	43,675	183,775	295	112	26	1,296	12.13
3,000	44,597	254,500	365	88	8	1,829	14.86
2,000	31,000	101,111	109	112	0	1,872	15.50
2,000	17,993	89,685	108	88	5	1,500	8.99
1,000	12,862	27,404	0	0	0	735	12.86

lighting, and 40 candle-power in the tungsten lamp.

The cost of the plant first in the table included, besides the items listed, a substantial brick station, but not the land, water-tube boiler and compound condensing steam engines and alternators with switchboard, with transformers and meters, all complete and ready to operate. The cost of the third plant included about three-fourths of an acre of land with a good brick station, and a complete generating and distributing plant. Power was developed with fire-tube boilers and compound condensing steam engines, driving alternators.

The fourth plant included a brick station built on leased land and an oil engine driving an alternating current generator, besides the wire and lamps given in the table. The second plant also was operated by two oil engines driving two alternating generators, and was well built, with a brick station on a half-acre lot. The fifth plant was steam-driven, with alternating generator. The last named plant also was steam-driven.

It will be noted that the costs of the six plants named above range from \$8.99 to \$15.50 per lamp of generator capacity, as a result of differences in the quality of the equipment, in the design of the plants, and in the degree of skill with which the buying and construction were done.

It may be noted that the estimated cost of the plant for 100 arc street lamps, or for 800 tungsten lamps of 32-candle power each, was \$20 per 50 watts capacity in the generators, while the actual costs of constructed plants, as given above, range from \$8.99 to \$15.50 per 50 watts capacity. The explanation is in part that the estimate of \$20 per 50 watts of generator capacity is based on the best equipment and construction throughout, and in part that the lines and distributing apparatus correspond with the capacity of the generators, in the estimate, while in each of the plants whose costs are recorded the generator capacity was made large enough to provide for an increase of the distributing system and commercial load.

ARTIFICIAL PAVING STONE

A NEW material for paving has been placed upon the market in Germany, having been tried on short stretches of streets in several cities of that country. It is a block pavement, the blocks being composed of crushed basalt or other similar rocks, which may be obtained from the refuse of quarries, mixed with a small percentage of cement. The mortar is subjected to heavy hydraulic pressure and formed into blocks which are then burned under high temperature for about twelve days, after which they are cooled as slowly as possible. Because this method of manufacturing is assumed to be similar to the formation of volcanic rocks, these paving blocks have been named Vulkanol. The blocks are of a brown chocolate color and show on a broken edge a similar color intermixed with white grains and small fragments of feldspar. They are tough in structure, and it is claimed that they withstand all the ordinary tests as to crushing, frost, etc., and that they do not become slippery and are as durable as granite. They are supposed to be laid on a concrete foundation for

heavy traffic, in which case stones 2.36 inches in thickness are said to be sufficient ordinarily. For a lighter traffic, stones 3.15 inches thick on a macadam foundation are preferable. The cost of street paving with this material is said to be less in the vicinity of Nuremberg than with granite blocks.

PAVING IN KNOXVILLE

THE city of Knoxville, Tenn., has during the past season laid 60,000 square yards of asphalt paving, 15,000 of bitulithic, 5,000 of brick and 40,000 of granitoid; a total of 120,000 square yards or 5.2 miles of street. This work was done under the Abutting Property Law, the city paying one-third of the cost and the abutting property owners two-thirds. Under a special act of the Legislature the city is allowed to levy a tax each year for the payment of the city's portion of this cost. In 1907 the city laid five miles of asphalt, bitulithic and brick paving under this law, that being the first year's work since the law went into effect; so that the city now has more than ten miles of these four kinds of paving. The granitoid which was constructed this year for the first time was put down by the Blome Company and was selected for streets which are used for heavy hauling. Vitrified brick had been used for such streets in previous years, but the granitoid is being tried this year, one reason for selecting it being that the cost is not as great as that of brick. Its wearing quality compared with the brick pavements already used on streets of similar traffic in the city will be watched with interest.

COST OF SEWER CONNECTIONS

DURING the first two weeks of September there were constructed, by the Board of Public Works of San Francisco, seventy sewer connections laid from the main to the curb. The average length of these was 22.6 feet, the average width 3.5 feet and the average depth 4.88 feet at the curb and 8.69 feet at the main, or a general average of 6.77 feet. The depth at the main ranged from two feet to fifteen feet and that at the curb from two feet to twelve feet. The cost of labor for individual connections varied from \$6 to \$56; the latter being for a trench 11 feet deep and 35 feet long, through rock and clay. Of these connections twenty-nine were at an average depth of six feet or less, twenty-three being from 5½ to 6 feet deep. The average width of these trenches was 3.37 and the average length 22.7 feet. The average cost for labor was \$12.30 per trench. The inspection charges against these were \$1.50 in some cases and \$2.25 in others; the average being \$1.73. Sheathing was employed in fourteen instances, a standard charge of \$1.50 being made in each case. In eighteen cases cartage was charged, ranging from \$1.25 to \$2.50. In only eight cases was there paving to be replaced, the total amount of this being 147 lineal feet and costing \$69.88, or 47.5 cents per foot of trench, or approximately 16 cents per square foot. Of these 29 trenches, 11 were in sand, 12 in clay, 4 in rock and 2 in filled ground. The cost of labor averaged 5.42 cents per lineal foot of trench.

CHICAGO MUNICIPAL LIGHTING PLANT

Report of Bion J. Arnold and Arthur Young—Electric
Current Obtainable from Drainage Board at
Less Cost than at City Power Plants

THE municipal electric street lighting of Chicago, which has been the subject of much contention and many investigations and articles, has again been reported upon, this time by Bion J. Arnold, consulting engineer, and Auditor Arthur Young. This report was made to the Mayor and was made public by him a few days ago.

In making this investigation and the calculations based thereon, these gentlemen took into consideration the items which have heretofore been omitted from the reports given out by the Department, these including depreciation, interest on investment, taxes, insurance, real estate rentals, maintenance and repairs, departmental salaries, office rent, and cost of water consumed. The figures showed that since the plant was constructed in 1887 there has been expended upon it \$3,655,408. The estimated depreciation up to August 1, 1908, was \$916,358 and the value of plants dismantled or sold was \$135,905; a total of \$1,052,263. This leaves the value of the existing plant as \$2,603,144. This is called the book value, but the actual value is stated to be \$2,253,869; the difference of \$249,275 being explained by the fact that, if the city had written off annual depreciation at the rate which the engineers figure as equitable and had placed this money in a sinking fund it would to-day have this amount as an unexpended balance.

During the current year a portion of the current required for lighting has been obtained from the Drainage Board, being generated by the Chicago Drainage Canal. The contract price asked by the Board for current used by municipalities within the sanitary district is equivalent to a little more than 0.5 cents per k.w.h.; this being a special price to such municipalities since they have borne the expense of creating the property by which the energy is produced.

Taking into consideration all the items above referred to, the report states that the cost of production per lamp per year and the total cost of lighting per lamp per year for the past five years have been as follows:

Year.	No. of arc lamps.	Produc- tion cost per lamp.	Total cost per lamp.
1903.....	4,827	\$45.12	\$85.11
1904.....	5,034	46.10	85.15
1905.....	5,743	43.57	78.96
1906.....	6,692	42.56	76.46
1907.....	7,647	44.74	81.64

Average for five years.....\$44.42 \$81.46

The reduction in cost shown in this table came only with the closing down of the steam plants and the purchase of current from the Canal Board. During the first seven months of 1908 the maintenance cost at the rate of \$83.98 per lamp. "With the system in operation as at present the cost per lamp per year will be \$60.56. This reduction in cost will not be realized during the year 1908, on account of the fact that a large amount of the new equipment now in operation

has been installed during the first few months of this year. This has necessitated the operation of the steam plants for a large portion of the year and has entailed the additional operating expense attendant upon the change from the old to the new system.

"The cost per lamp per year in case the entire alternating current system were installed and supplied with power from the Sanitary District would be \$42.17. The estimated cost per lamp per year under present operation is \$60.56, which is \$21.08 less than the cost per lamp per year for 1907. This reduction results in part from the cheaper cost of power as now purchased from the Drainage Board, and in part to a decrease in other operating charges, due to the installation of new and modern types of equipment, as well as to the results of the general policy of the Department to replace the old and necessarily complex distributing system by a more simple and economical distribution layout. All of these factors enter into the reduction of cost that has been realized up to the present, and as they are applied to the system in the future will doubtless affect a still greater saving in the cost of lighting, until finally when all of the old equipment has been replaced by the newer type equipment and the capacity and reliability of the Sanitary District power has been so proved as to permit of the discontinuance of the present steam plants, the lower cost of \$42.17 per lamp per year should be realized, provided the Sanitary District Board continues to furnish energy at the same rate as that given in the present contract with the city."

Mayor Busse believes the recommendation to get all current needed from the canal power plant should be adopted, and is having investigated the question whether the canal can certainly furnish all the current needed by the city. Personally he believes that it is foolish for the city to manufacture its own current if it can be purchased elsewhere at less cost. R. R. McCormick, president of the Drainage Board, is said to have stated that their plant is now generating current equivalent to 12,000 h.p. per day, and will have available 12,000 more in a few months, and he believes a total of 41,000 h.p. can be developed from the canal power as at present contemplated, which will enable them to supply all the current needed by the city.

The maximum saving indicated by this report as possible by purchasing current from the Canal Board would amount to a saving, as compared with the cost last year, of from \$200,000 to \$300,000 a year. Officials who have defended the municipal lighting plant against criticism maintain that, although it is now possible to reduce the cost of lighting by purchasing power, the operation of this plant by the city has resulted in forcing down the price for current charged by the private companies as nothing else would have done; also the example set by the municipal plant has made it possible to compel the private companies to put their wires underground.

The trial contract for current with the Drainage Board expires December 1, and the city Council is expected to decide before then whether to continue the operation of the municipal lighting plants.

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NOVEMBER 18, 1908

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Municipal Lighting in Chicago

THE latest report upon the Chicago municipal electric lighting plant, a synopsis of which is given on the opposite page, has been accepted immediately by critics of the plant as supporting their contention that municipal lighting in that city is and has ever been a mistake. What the report does state is that, by installing the most modern types of equipment, using alternating current and obtaining power from a hydraulic plant at the unusually low price of about 0.5 cent per kw.h., the cost of lighting can be reduced almost one-half. The city has been undoubtedly slow in replacing their old with more modern equipment; but this improvement has now been under way for some months. That the Department cannot generate electric current for half a cent a kilowatt hour, using steam, is not remarkable. We doubt if any plant, public or private, has ever done so. That the city can obtain current at, say, 20 per cent. of what it costs by its own steam plant

is its good fortune, however, and it would seem to be good policy to take advantage of the opportunity. If this is done the opponents of municipal ownership will proclaim another failure of this "fad." In reality it will be largely another illustration of the recognized fact that hydro-electric plants are generally much more economical than steam electric. Chicago's weak point in the argument has always been her failure to include in her estimates the fixed expenses, depreciation, etc. It is to be hoped that her future reports will include these items.

Petitions in Municipal Government

THE new charter of the city of Haverhill, Mass., contains a provision which the "Boston Transcript" comments upon as being open to serious misuse. This is, that 25 per cent. of the voters may petition the Municipal Council to pass a specified ordinance, in which case the Council must either pass this within twenty days or else submit it to the voters at a *special* election; when, if it receives the majority of the votes, it becomes a law. If 10 per cent. of the voters sign such a petition the Council must either pass it or submit it to the people at the next *regular* election. Another provision is that if 25 per cent. of the voters protest against any ordinance within ten days after its passage, it shall be suspended until the Municipal Council decides whether to repeal it or submit it to the voters at a special election.

The "Transcript" calls attention to the generally recognized fact that the obtaining of signatures to a petition is a comparatively easy matter, regardless of what the petition may be; and that it therefore requires only sufficient industry, or funds for hiring canvassers, to obtain the requisite number of signatures to a petition for any ordinance which it may be to the advantage to any citizen to advocate. Aside from this danger, "The Haverhill plan rests on the theory that one man's judgment is as good as another's; that a count of noses is all that is necessary. What becomes of the Committeeman's investigation and the specialist's research? In everything except government the tendency is toward division of labor and specialization."

This last criticism applies likewise to other tendencies in municipal government. There seems to be a feeling in many quarters that true democracy requires that citizens at large shall directly decide every question involved in the conduct of their government; and we believe that this idea is the source of much of the inefficiency in our city governments. The citizens should rule by electing their officials; but, after placing proper specialists in charge of the various departments, should leave to them all decision as to methods and hold them responsible for results. There is an old saying that "A man who is his own lawyer has a fool for a client"; and it would often appear that the same might be said of citizens who endeavor to run the details of the various municipal departments, rather than select proper heads of the same and leave these matters entirely in their hands.

UTILIZING CITY REFUSE

Clinker Used in Sewage Filters—Ground and Made into Concrete Articles, Bricks and Paving Blocks —Can Baling Machine

Two papers were read before the Annual Congress of the Royal Sanitary Institute, in England, one by W. J. Steele and the other by H. Percy Boulnois, each entitled, "Utilization of Residuals from Refuse Destructors." While there was some discussion of these, there appeared to be no differences of opinion either between the authors or among the other members present.

The latter author stated that the average amount of clinker left from burning refuse was about 25 to 33 per cent. of the original matter, and the fine ash about 1 per cent.

The clinker varies somewhat in composition, but in general this is approximately 69.4 per cent. of silica, 2 to 4 per cent. of iron and alumina oxides, and 9.2 per cent. carbonate of lime. In England the clinker has been used as a filling for low land; as road material under light traffic; as sand for mortar when broken up in a crusher; for the construction, when mixed with Portland cement, of concrete, especially for pavements, curb stones, etc.; in making bricks; for all purposes for which sand is used; and the screened broken clinker has been used for filtering material in sewage filters. The material is very hard and its crushing requires an unusually strong crusher. In Liverpool and other English cities the manufacture of cement slabs, curb stones, steps, and other materials for municipal or building use has been carried on extensively for some years.

At Zurich, Switzerland, a Mr. Schultess makes brick of this material mixed with lime, the slaking of the latter being effected by a small quantity of moisture aided by low pressure steam, all excess of water in slaking being thus avoided and hydrated lime being obtained in the form of a fine powder. This is carefully screened and by means of a measuring machine fixed proportions of lime and pulverized clinker are mixed, the proper quantity of water is added and the bricks are molded in a power press. They are then put into a steaming chamber where they are subjected to saturated steam at atmospheric pressure for about 48 hours, after which they are ready for use. At Fulham, England, nine parts of crushed clinker and one part of cement are mixed and made into bricks under pressure. These bricks weigh six pounds each and absorb 6 per cent. of water. They do not sell readily, as they are very hard to break, it being impossible for masons to break them with a trowel. The color is a pleasing gray. Another company uses broken clinker in the manufacture of asphalt paving blocks. Broken winter clinkers have been used in percolating filters in Salisbury, England, where they were preferred to steam clinker or gas works clinker; but the summer clinker was found to be rotten and undesirable.

The author knew of but two uses for flue dust or fine ash. One, making it into a disinfecting powder by mixing it with a disinfectant (such use being to render

the disinfectant more portable and easier of manipulation, or else being in effect an adulteration); the other, as a fertilizer for grass or for lightening clay soils. Of the second use some instances seem to have given favorable results.

For the utilization of tin cans and other kinds of metal a tin-baling machine is used in England, which he described as consisting of a cast-iron chamber about 4 feet long, 2 feet wide and 3 feet 6 inches deep. This chamber is filled with the metal articles and then a ram, 3 feet 6 inches by 2 feet, driven by a 20-horsepower electric motor on a 5-inch worm shaft, is slowly forced into the chamber and compresses the tins, which originally filled a longitudinal space 4 feet in length, into a more or less solid mass 2 or 3 inches thick and having the cross section of the chamber, thus reducing the bulk to about 1-16 the original mass. This permits the convenient handling of the material and loading of 6 or 7 tons onto a car which would carry not more than 1½ tons of loose cans. The metal is also more saleable in this form and brings from \$3.50 to \$4 per ton at the works. The cost of this machine was \$750; the cost of pressing the metal and loading it into cars is about \$1.75 a ton.

Another by-product of destructors is poultry food, made by breaking up oyster shells which are brought with the other refuse.

With reference to the utilization of heat from destructors, Mr. Boulnois stated that it has been learned that it is not safe to expect much more than one pound of steam per pound of refuse; and that this can be utilized to advantage only for continuous loads.

Mr. Steele, commenting on the use of ground clinker for manufacturing stone substitutes, stated that such substitutes can never have the same properties as stone and that where stone quarries are near a town it might be more economical to use spawls from the quarries than to haul clinkers from the destructor. The writer estimated that even were his own city, Bristol, remote from stone quarries, probably not more than 50 per cent. of the clinker resulting from destroying all its refuse could be used in the manufacture of slabs, stone, paving blocks, etc. Concrete slabs, he stated, are manufactured by hydraulic presses, by rocking machines and by hand labor in wooden molds. These slabs are composed of one part Portland cement to three parts clinker, and are faced with granite chippings and cement in the same proportion. Concrete slabs or flags have been used for sidewalks in Bristol, where about two miles are laid every year. These are made under a hydraulic pressure of two tons to the square inch; 7 square yards are made in one day of 9½ hours at a cost of 60 cents per square yard, this including first cost, depreciation and repairs to the machinery.

In the discussion of these papers reference was made to the use of clinker in tar macadam for a road which had been in use for three years and was giving excellent satisfaction. It was believed by several members that clinker should not be used in concrete which was to be reinforced, as it might corrode the iron, and Mr. Steele agreed with this opinion.

NEWS OF THE MUNICIPALITIES

Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

ROADS AND PAVEMENTS

Quarterly Report of Municipal Asphalt Plant

Brooklyn, N. Y.—The quarterly report of the Chief Engineer of the Bureau of Highways for three months ending June 30 contains the following figures regarding the operation of the municipal asphalt plant. The total cost of labor and supervision at the plant was \$6,471.53. The total plant product was 6,214 (9 feet) boxes of surface mixture and 812 boxes of binder. The materials used at the plant were asphalt, 500,991 pounds; residuum oil, 64,459 pounds; sand, 46,666 cubic feet; stone, 8,422 cubic feet; filler, 497,120 pounds. The asphalt and oil, combined in the form of asphalt cement, is reported as 684,000 pounds used. The work on the street consisted of street repairs and repairing openings. The cost of labor on street repairs was \$15,858.20 and on repairing openings \$3,909. The average force employed on street repairs was 5 foremen, 4 engineers, 47 asphalt workers, 1 laborer and 8 trucks. Included in the entire total of \$15,858.20 for street repairs is the sum of \$476.79 for repairing concrete. The work done by the repair gangs was 50,216 cubic feet surface laid, 6,482 cubic feet binder and 533 square yards of concrete. On restoring openings a force of 2 foremen, 1 engineer, 15 asphalt workers and 1 laborer were employed. Of the total spent for street openings \$1,148.94 was for concrete work and \$2,760.20 for asphalt work. Miscellaneous materials used in the street were: Cement, 415 bags; 51 cubic yards stone, 46.5 cubic yards sand; 1,012 bags coal, 50 cords wood and 153 barrels of cement.

Widening Busy Street in Chicago

Chicago, Ill.—Automobilists and users of vehicles used mainly for pleasure are watching with interest the work of widening that section of Michigan avenue between Jackson boulevard and Twelfth street. Concrete for the new 25-foot sidewalk is being laid and it will be ready for the public in a few days. The walk now in use there will be torn up and the avenue made wider by 25 feet, the present width being 55 feet. At times the thoroughfare is overcrowded with vehicles and in the evening hours much of the space close to the curbs has been used by automobile drivers. The new sidewalk at present is in parallel sections, but the space intervening will be filled, making one broad walk.

Seventeen Bridges Under Construction

Long Island City, N. Y.—Seventeen bridges and high viaducts are in course of construction in Long Island City. An army of men are employed in the immense railroad yard, which stretches from Hunter's Point into Sunnyside and across to Woodside, building steel and concrete arches, which will carry the public thoroughfares over the top of the network of tracks to be laid in the yard below. The Thompson avenue viaduct on the main automobile route to the interior of Long Island has been completed. Of equal importance is the viaduct across Hunter's Point avenue, which will be on the line of the main trolley routes from Manhattan via the Belmont tunnels.

Paving Company Will Make All Pipe Connections

Marshall, Tex.—The paving of three streets with bitulithic, for which contracts were awarded several months ago, can now proceed, as the bonds issued to pay for the work have been sold. A street car line will also be constructed on one of the streets at an early date. To facilitate the work and avoid the annoyance of a number of contractors working in one street, Council has awarded a contract to the bitulithic company to put in all the water and other pipes and services on the street to be paved.

First Brick Highway Under New Law

Muncie, Ind.—The first brick road constructed in Indiana under the provisions of the new "three-mile" road law was recently opened for traffic in Muncie. It is West Jackson street, from Kilgore avenue to the West Side bridge, a distance of about a half mile. Within the next few weeks several other brick streets, constructed at the township expense, will be open in Delaware County, some of them being of considerable length. Several village streets will be paved in the spring and much brick road work that has been started in Muncie this fall cannot be completed until spring. Nearly a half million dollars of road improvement work, under the provisions of the "three-mile" law, is either under way or contracted for in the county.

Asphalt Repairs Before Norfolk Council

Norfolk, Va.—Representatives of four companies appeared before a committee of Council to make suggestions and preliminary offers for installing an asphalt plant in the city, with which the city might make its own repairs or for doing the work at a price per square yard. The agent of F. O. Blake, of St. Louis, Mo., made the most interesting proposition. He said he would build a plant for the city for actual cost plus 20 per cent. for profit, or he would lay asphalt in repairs for \$1 per square yard. The prices mentioned for work by the agents of other companies ranged from \$1.65 to \$2 per square yard. A telegram was received from George M. Lamson, of New York, offering to sell the city asphalt for \$23 a ton. Formal bids will be received November 20 on the various propositions.

Popular Vote on Patented Pavements

Portland, Ore.—Councilman Dan Kellaher is preparing a petition for the submission to the voters at a special election on the question as to whether Council shall receive bids for laying patented pavements which do not admit of competition.

Streets Torn Up and Unprotected

Seattle, Wash.—Many complaints are being received because contractors have torn up many blocks of streets on which they are working and have neither finished their work up close nor have they guarded it and provided sufficient temporary crossings and lights. It seems that most of the work now going on is done under old specifications, in which the right to open up work was not limited and careful provisions were not made for the protection of the work. In later specifications this has been corrected.

Toledo Builds Fifteen Miles of Sidewalk

Toledo, O.—Fifteen miles of stone and cement sidewalks have been built in Toledo during the present season. Four hundred and fifty miles altogether have been built, and there are still 400 miles that need improvement. The city has a sidewalk fund upon which it draws to pay the contractor in cash. The result is that stone walks are laid for 12 cents a square foot and cement walks for a little less. The property owner can either pay the city at once for the walk, or it can be placed on the tax duplicate to be collected in two assessments.

Small Cobblestones Declared Best for Hill

Wilkes-Barre, Pa.—Street Commissioner Barrett and City Engineer Finch while attending the recent convention of the American Society of Municipal Improvements at Atlantic City took occasion to consult the paving experts for a solution of the problem of paving the North Franklin street hill. The opinion expressed was that small cobblestones, uniform in size and flat in shape, so as to form close joints, would be the best material to use.

SEWERAGE AND SANITATION

Many Protest at Hudson Pollution

Albany, N. Y.—Some of the most prominent citizens of New York City signed a petition, which was recently presented to Governor Hughes, describing the conditions of pollution of the Hudson River, and asking the Governor to exercise his power to abate the nuisance. The petitioners allege that municipalities, villages, corporations, shops, factories, mills and other industrial establishments are now violating the health laws of New York, and that the discharge from these public and industrial establishments discolors the water, kills the fish, gives rise to unhealthy and offensive odors, pollutes and poisons the water, renders it unfit for agricultural and domestic purposes and constitutes a continuing nuisance. The petition also sets forth that "the Hudson River is now deprived of a natural pure water flow by reason of the diversion of billions of gallons from the Croton watershed, and will in the near future be likewise deprived of the pure water of the Catskill watershed, amounting to thousands of millions of gallons, thereby losing an important scouring and purifying agency; moreover, permitting the up-flow of the waters laden with sewage and filth of municipalities and towns situated between these counties and the Narrows."

Physicians Warned to Report Contagious Diseases

Chicago, Ill.—Notices have been mailed to all physicians in the city warning them that negligence or failure to report contagious diseases will make them liable to a penalty not to exceed \$200. Pre-eminently, the campaign is directed against tuberculosis. Need for this warning is shown by the figures of cases reported, which amount to about 2,000 a year, while the death rate from the same cause is much more than 3,000.

Work Stopped on Big Cienfuegos Contract

Cienfuegos, Cuba.—The contractors for the new sewer system are meeting with difficulties. A strike on the part of the laborers for more pay and an order from Mayor Figueroa to stop work were incidents of the first day's work. Mayor Figueroa declares the contract is illegal until the courts decide finally on the appeal by the *ajuntamiento* from the decision of Governor Magoon, who favored the contract.

To Flush River and Protect Health

Fort Wayne, Ind.—Poisonous substances backing in from sewers, it is claimed, have so polluted the St. Mary's River during the present low stage of the water that the fish are dying in great numbers and the health of the city is menaced. In order to remedy the condition Member Jesse Brosius, of the Board of Public Works, suggested that steps be taken to have the gates of the great reservoir at Celina, O., opened and a flood of water poured into the St. Mary's for the purpose of flushing the stream. City Attorney Guy Colerick was instructed to take the matter up with the Ohio authorities.

Railroad Refuses to Permit Tunneling Under Tracks

Elgin, Ill.—Officials of the Chicago, Milwaukee & St. Paul Railroad Company objected to the plans made by the contractors for constructing a sewer under the railroad tracks. The contractors, the Logan & Gertz Construction Company, proposed tunneling. The railroad officials require that the work should be done by first constructing a temporary bridge under the tracks, with poles driven to support the mudbeams.

New Condenser Saves Money

Wheeling, W. Va.—At a regular monthly meeting of the Water Board a most gratifying report was made of the operation of the new condenser. The records of fuel consumed showed a saving of \$13 a day—sufficient to pay for the installation in a very few years.

Septic Tanks and Royalties

Fresno, Cal.—The city of Fresno, as well as all other California cities using septic tanks, has received a demand from the Cameron Septic Tank Company for royalties. The claim is based on a patent on the septic process held valid by the United States Circuit Court in New York State. The claims of the Cameron company have been investigated by City Engineer Hoxie, who says that the process used by the city is not an infringement of the Cameron patent. Based on this report, Mayor Ed. E. Bush has issued a circular addressed to other cities using similar methods of sewage disposal and asked their co-operation in resisting the demands. The Mayor states that the city is willing to give what information it possesses on the subject gratuitously and would be glad to receive any useful information in the possession of any other city.

Dairy Inspection in Pennsylvania

Harrisburg, Pa.—The Department of Health is endeavoring to have no milk served in the commonwealth that is not clean and healthful. In this connection Commissioner Dixon's health officers have inspected 17,000 dairy farms since August 1. The dairymen have met the officers halfway and are showing every disposition to comply with the regulations. Many unsanitary conditions were found and corrected, but conditions were good at 50 per cent. of the dairies, and several thousand were in a model condition.

Indianapolis Eating Places Improve

Indianapolis, Ind.—There has been marked improvement recently in local restaurants and eating houses, according to the Board of Health, as a new system of inspection has been instituted, with excellent results, through Dr. Eugene Buehler, Secretary of the Board. Inspectors who have the work in charge have made about 50 inspections, and of this number only six places have gained an average above 75 per cent. Those falling below 60 per cent. will be given an opportunity to improve. Failure to do so will result in publication, and for a third offense steps will be taken to revoke their licenses. The inspectors found a number of the smaller restaurants averaging between 60 and 75 per cent., while some of the larger ones fell below the 60 per cent. grade.

To Purify Lake Erie and Niagara River

North Tonawanda, N. Y.—Representatives of the Buffalo Chamber of Commerce, the Niagara Falls Board of Trade, the Lockport Board of Trade, the Tonawanda Business Men's Association and the North Tonawanda Board of Trade will meet in North Tonawanda shortly in a movement to secure the abolishment of pollution from the waters of the lakes and their tributaries.

Combined Pumping Station Proves Economical

Orange, N. J.—Calculations made by Prof. James E. Denton, Consulting Engineer, and City Engineer Fred T. Crane show that the new combined water and sewage pumping station is being operated at a material reduction over the cost of separate plants. The cost of pumping has varied between 1 and 1½ cents a thousand gallons. The cost of sewage pumping is about a tenth of the expense.

Smallpox at Texarkana

Texarkana, Tex.—Eleven cases of smallpox were recently discovered, all of them but one among school children attending the Rose Hill School. Investigation developed the fact that the cases originated from a storekeeper, whose trade was among school children. Other suspicious cases are being watched.

Sanitary Convention

Washington, D. C.—Ecuador has ratified a sanitary convention with Panama looking to the prevention of communication of diseases between the two countries, according to a dispatch received at the State Department from American Minister Fox at Quito.

WATER SUPPLY**Impending Water Famine Averted**

Altoona, Pa.—The threatened water famine has been averted by running a supply line from Sugar River which is capable of furnishing 500,000 gallons a day. Previous to this a supply of 380,000 gallons a day had been obtained from the Allegheny Water Company, but owing to the small size of the connecting pipe the amount was insufficient.

Baltimore's Projected Water Supply

Baltimore, Md.—Water Engineer Quick's tentative plan for the spending of the new \$5,000,000 water loan provides for an immense new water storage reservoir in the Gunpowder River Valley, above the present Loch Raven. This reservoir will be formed by damming the river with a 75-foot concrete dam, about 1,500 feet above the present Loch Raven dam. By means of a tunnel and a shut-off system the full flow of the Gunpowder can be carried around the present Loch Raven when the water is muddy, and again turned into Loch Raven when the water has cleared off. From Loch Raven, which will, of course, be supplied from the new reservoir, the water will come into the city via Lake Montebello and Lake Clifton. A secondary scheme for bringing the Gunpowder water into the city is to make a portion of Lake Roland a storage reservoir, and feed it from Loch Raven through a great tunnel three miles long. This arrangement of Lake Roland will be effected by building a solid concrete wall underneath the Northern Central bridge at Hollins, and making the portion of the lake east of it the reservoir. A cut through the hill back of Hollins will give an outlet for the present Lake Roland, the water from which will not be used by the city when the new Gunpowder reservoir is completed.

Contract for Six-foot Steel Riveted Pipe Confirmed

Brooklyn, N. Y.—The T. A. Gillespie Company, Pittsburgh, Pa., has been notified that it may proceed with its contract for laying 16 miles of water mains in the Borough of Brooklyn. The contract amounts to \$2,000,000. The main line will be six feet in diameter of riveted steel pipe, to be supplied, it is understood, by the National Tube Company. The contract has been held up some time by lawsuits, and the Appellate Division of the Supreme Court of New York has affirmed the right of the city to proceed with the work.

Property Owners Form Water Company

Butler, Pa.—More than 160 property owners of Butler have organized a water company to drill wells and conduct water to their properties located in the Fifth and Third wards. Service will be given to about one-eighth of the city provided all the property owners of that section become members of the new company. An option on a suitable lot for a well has been secured, and members of the company have been assessed \$1.50 for the cost of sinking the well. No water will be sold by the company.

Jersey City to Supply Passaic With Water

Passaic, N. J.—At a meeting of the special water committee of the Common Council it was decided to recommend that Passaic purchase its water supply from Jersey City. The contract will be closed at once. Jersey City offers to supply water at the rate of \$60 per million gallons in quantities up to and including 3,000,000 gallons per day. A schedule of rates is submitted for larger quantities up to 12,000,000 gallons per day. At present Passaic pays \$80 per million gallons for its water supplied by the Acquackanonck Water Company.

Experimental Filters to Be Installed

Nashville, Tenn.—At the suggestion of Superintendent Reyer, of the Water Works Department, the Board of Public Works will install two small experimental filters next year. One will be of the show sand and the other of the mechanical type.

Water Contract Renewed for Ten Years

Indianapolis, Ind.—The contract with the Indianapolis Water Company has been renewed by the Board of Works, with no changes so far as domestic service is concerned. The municipality, however, will be furnished an increased amount of free water. The number of park and drinking fountains will be increased. About 500,000 gallons of water a month will be furnished to the proposed City Hall. About 100,000 gallons per month will be supplied the city asphalt plant. New downtown street hydrants will be put in and the old ones used for filling street sprinkling wagons. The total number of fire plugs will be increased from 1,751 to 2,465 and the drinking fountains from 44 to 71. The price for hydrants remains unchanged, at \$45 a year. The signing of the contract was a surprise to the public and is subject to the approval of Council.

Better Cooperation of Water and Street Departments

Lynn, Mass.—The Street Improvement Commission, a special committee appointed for the purpose of improving street conditions generally, held a joint session with the Water Board. The question of location of pipes was discussed. It has been the custom to locate water pipes on one side of the street, at a certain distance from car tracks to avoid electrolysis, and gas pipes on the other side, but no general agreement was ever made as to the side on which the water pipes should be placed. Want of cooperation between departments also developed. Streets have been improved without adequate notice having been given to the water board to repair pipe. The commission was of the opinion that an agreement for street improvements should be made during the winter so that underground structures could be properly attended to in advance.

Emergency Water Works Quickly Installed

St. Albans, Vt.—St. Albans is now enjoying its rapidly constructed emergency water works. The system consists of a half-million-gallon-per-day pump, an in-take into St. Albans Bay and a short section of main connecting with the regular system. The installation was made in a little more than a week after the material arrived on the ground. The work was not completed any too soon at that. Water at the reservoirs had fallen so low that the city had been put on a one-hour-a-day service.

Low Water in Reservoir May Shut Down Filter

Springfield, Mass.—The water in the Ludlow reservoir continues to fall at the rate of one-tenth of a foot a day, and unless there is a heavy rain within a few days the intake pipe will be uncovered, which will necessitate either shutting down the filter or extending the pipe farther into the reservoir. It is not believed that the public would be satisfied with unfiltered water, and unless rain comes the engineering force probably will get busy on some plan for extending the pipe into the deeper water. It will be a difficult job to connect on the additional sections of the 36-inch pipe, and the Water Department is hoping for rain to do away with the necessity for it. Ordinarily the filter runs until about the first of December, by which time the cold weather puts a stop to its operation.

Litigation Over Cost of Moving Main

Watertown, S. D.—The Watertown Water Works Company and the City Council have joined issue in what may prove to be a long and costly fight over the moving of a couple of mains from two abandoned streets. One of the mains in question is the principal one supplying the business district, and on the safety of which depends its fire protection and rate of fire insurance. Its removal from what is now private property to the newly opened thoroughfare is imperative before the excavation for a big business block over its present location puts it out of business and so endangers the business district. The cost of its removal is estimated at from \$6,000 to \$10,000, and neither the company nor the City Council will stand the cost.

Alleged Failure of High Pressure System

New York, N. Y.—Considerable delay was experienced in getting water from the high pressure system to a recent fire in Water street. The firemen claimed that the hydrant was out of order. I. M. de Varona, Chief Engineer of the Department of Water Supply, claims that the fault was the result of inefficiency in fire apparatus or in handling it. When water was turned on to the water tower for some reason the flow stopped. As evidence that there was nothing the matter with the hydrant, Mr. de Varona says that when the water ceased to flow from the tower a line of hose coupled to another of the hydrant's four plugs was getting plenty of water at a good pressure. Moreover, he states that there had been trouble with the same water tower on a previous occasion, when it was said a stone got in the nozzle and checked the flow.

Firemen's Relief Association Chartered

Suffolk, Va.—A charter for the Firemen's Relief Association of Suffolk has been granted. The purposes for which it is formed are benevolent, that is, to comply with an act of the General Assembly of Virginia, entitled "An act to create a firemen's relief fund and to increase the efficiency of the fire departments of the cities, towns and counties of Virginia." The further purpose of this corporation is to "receive and disburse according to the law and the very right of the matter the funds received from the State under the aforesaid act." The names of the trustees who are to manage the affairs of the same shall be five; those of the first year being H. M. Butler, R. R. Smith, Jr.; H. S. Eley, W. T. Jones and R. L. Jacobs, all of Suffolk.

Watertown and Its Ladder Truck

Watertown, Mass.—About three years ago, when the Board of Selectmen and the Fire Engineers desired to bring the Department up to date they bought a truck from a firm in Elmira, N. Y. When the truck arrived it was found to be too large for the house in which it was to be put, and the only alternative was to build a new house for it. The truck was made to fit this house, but was still too heavy, so bids were called for. To the surprise of the people, the same company was awarded the contract. When the truck was weighed after arriving in Watertown, it was found to be 1,400 pounds over weight and back the truck is to go to the builders.

GOVERNMENT AND FINANCE

Austin Moves for New Charter

Austin, Tex.—Acting on the authority given him by the Commission Campaign Committee of 100, Judge Charles Rogan appointed the following as members of a committee of seven to draw up a charter for the city of Austin under Commission Government: T. B. Cochran, T. W. Gregory, Charles Rogan, Clarence Miller, Budley Fisher, M. M. Shipe and John E. Shelton. The form of charter selected by them will probably be a combination of the Galveston and Des Moines charters. The charter committee has been instructed that any charter selected by them must embody the initiative, referendum and recall features to be acceptable to the larger committee.

Buffalo Favors New Charter

Buffalo, N. Y.—Buffalo voters favored the proposed new and simplified city charter. The question in the form of a referendum was on the ballot machines. The result was as follows: Yes, 13,139; no, 4,327.

Memphis to Have Commission Government

Memphis, Tenn.—The People's Democratic party was successful at the recent election. The party is pledged to give Memphis a commission form of government similar to that of Texas cities.

Largest Town in State Adopts City Government

Claremont, N. H.—Claremont, which has long been the largest town in the State, with a population of 6,498 in 1900, has voted in favor of a city charter.

Mayor Hibbard Asks Early Detailed Estimates

Boston, Mass.—In accordance with his announced intention, Mayor Hibbard, in a circular letter to the heads of the city departments, requested them to file in the Mayor's office by the middle of November detailed estimates of the probable expenses and revenue of the departments for the coming fiscal year. Heretofore such estimate have been asked for December 15, but few officials literally obeyed the request. It is explained that changing the date affords greater time to examine the heads of departments as to the needs of their departments. It is also expected that the early submitting of these estimates will prevent the padding of payrolls, as the labor account will be kept distinct from the material and supplies account. The most important feature of Mayor Hibbard's plan, however, is that it will establish a system of exact estimating for the information of the people. The Mayor believes that the public is entitled to know exactly how much each bathhouse, how much each park and how much each institution is costing.

Commission Form for Gloucester

Gloucester, Mass.—Government by Commission was approved by the voters of Gloucester, and the new civic charter, which, in many respects, is similar to the civic charter adopted by Haverhill, was adopted by a majority of 382 votes, there being 1,851 votes favoring the adoption and 1,469 against it. The charter becomes operative immediately and the election under it will be held in December. The Gloucester charter does not eliminate politics, as does the Haverhill charter, all the candidates being nominated by the filing of nomination papers, and their party designation appears on the ballot. There is no preliminary election, and the recall, initiative and referendum features are not embodied in it. The veto and appointive power is taken from the Mayor and vested in the commission of five members, including the Mayor and four municipal Councilmen.

Charges Incompetence Against Borough President

New York, N. Y.—Mayor George B. McClellan has sent to the Governor formal charges against President Louis F. Haffen, of the Borough of the Bronx, prepared by the Commissioners of Accounts. On receipt of them the Governor will grant a hearing to the accused Borough President. Similar action was taken in the case of John F. Ahearn, Borough President of Manhattan, when he was accused of mismanagement in his office. The charges against Borough President Haffen include incompetency, waste, neglect, violation of law and misconduct in office.

Asks Why One City Spends More than Another

Norfolk, Va.—Councilman J. Frank East has introduced the following resolution:

Whereas, It is reported that the cost of running the city of Richmond is only about half of that required to run the city of Norfolk, notwithstanding the fact that the population of the former city is much larger than that of our own municipality, and believing that there is no good reason why such a state of affairs should exist; therefore be it

Resolved, That the Board of Control be requested to investigate the expense account of the city of Richmond with a view to applying the same policy of economy to the city of Norfolk, together with their recommendation as to the needed legislation necessary to conform Norfolk city expense account to and along the line now in effect in the city of Richmond.

Resolved, further, That it might be advisable to have representation from the different commercial organizations of the city to act with the Board of Control in this matter in an advisory capacity.

Sherman Charter Prepared

Sherman, Tex.—The terms of the proposed charter have been made public. The system of taxation, together with the tax rate, remains about as it is at present. The charter also provides for a Mayor and two Commissioners, to be elected by the people. The Commissioners will take the place of the present Councilmen. The Mayor is to receive a salary of \$2,000 per year and each of the Commissioners \$1,800 per year, all to give their entire time to city business.

REFUSE COLLECTION AND DISPOSAL

Dumping Snow in River Basin Discussed

Boston, Mass.—At a hearing before the Harbor and Land Commission the Boston Elevated Railroad and the city of Boston presented arguments to sustain their petition for the right to dump snow and ice in the Charles River Basin. The application is contested by the city of Cambridge and the Charles River Basin Commission on sanitary grounds. Superintendent of Streets Guy C. Emerson presented statistics to show that the contamination from snow was a small matter as compared with that by the marginal conduits.

State Board of Health Investigates Dirty Streets

Dayton, O.—On account of the refusal of Council to give money to the Service Board for street cleaning and the consequent neglected condition of the thoroughfares, the State Board of Health has sent an assistant engineer to Dayton to investigate the sanitary conditions. Mr. Hansen, the Engineer, says that the State authorities are looking after this phase of municipal government very closely, as dirty streets on which manure and vegetable matter is collected soon permeate the community with disease germs.

Pittsburg Decides to Build Two Incinerators

Pittsburg, Pa.—Superintendent James F. Edwards, of the Health Bureau, is pleased over the vote in favor of the issue of \$185,000 bonds for building incinerators. Preliminary plans for two plants were prepared some six months ago by Rudolph Hering, one of which he proposed to locate at the River avenue pumping station. The cost of operating is figured at \$75,000 annually, which sum is expected to be realized from the sale of various articles picked out of the rubbish. At present it costs 61 cents per capita per year to dispose of rubbish.

Falling Leaves Make Trouble for Cleaning Contractor

Washington, D. C.—Fines aggregating more than \$500 have been imposed on the contractor for street cleaning for failure to keep the streets clean. According to Commissioner West, who has charge of that branch of the city government, the chief fault with the contractor's work has been failure to keep the streets properly cleaned of leaves and waste paper. There has been an unusual fall of leaves this year. Hand cleaners have collected on an average from 7,000 to 8,000 bags of leaves daily, in addition to the work done by the night forces. Although the contractor has employed extra help, the result has not been satisfactory.

RAPID TRANSIT

New Boston Subway Nearly Ready for Operation

Boston, Mass.—The Washington street tunnel is rapidly approaching completion, and it is hoped that trains will be running through it by Thanksgiving Day. The new stations are said to be particularly pleasing. They are free from useless ornamentation, but are light, spacious and sufficiently beautiful in their main features to satisfy the most critical. The hospital idea of sanitary construction has been carried out everywhere, and every angle and corner has been rounded to prevent the accumulation of dust. The construction is fireproof so far as possible. Unlike the older Boston subway stations, the new ones will have straight platforms, allowing a close fit of train and station. The subway has cost about \$2,000 a foot, making it one of the most expensive pieces of subway construction ever built. The subway is nearly a mile long and cost \$10,000,000.

Data Regarding Foreign Street Car Regulations Compiled

Washington, D. C.—The District Railway Commission is just in receipt, through the Consular agencies of the State Department, of additional data showing the regulations and ordinances for operating street railways in Scotland, Calais, Nice, Lyon, Havre, in France; Magdeburg, Cologne and Plauen, in Germany, and London, Liver-

pool, Plymouth, Sheffield, Hull, Leeds, Southampton, Bournemouth and other places in Great Britain.

* It is the purpose of the Commission, through this means, to ascertain how street railways are regulated in other countries, and does not necessarily mean that any of the regulations or ordinances in force there will be adopted in Washington, although those that are applicable and will effect a betterment of the service will doubtless be considered.

Cleveland Municipal in Receivers' Hands

Cleveland, O.—The United States Circuit Court has granted a petition of the Central Trust Company of New York, placing the Municipal Traction Company in the hands of receivers and appointing Warren Bicknell and F. A. Scott as receivers. The street car situation in Cleveland, therefore, now stands thus: The Municipal Company, after operating the lines for six months at a three-cent fare, must turn them over to the receivers; the receivers are to manage the property, giving the lowest possible fare consistent with good service, as outlined in the decision; and the management is to be "impartial as to the old warring interests." The property of the Municipal Company is to remain in status quo and it is left to future lawsuits to determine whether the original three-cent lines will be restored to the owners as well as the question of the validity of the election and the life of the lease. The life of the receivership will be "long enough to satisfy the court that chaos will end."

Yonkers to Sue Railroads

Yonkers, N. Y.—After a spirited debate, lasting more than three hours, the Common Council, after a session lasting until 1 o'clock in the morning, adopted a resolution directing the Corporation Counsel to begin proceedings to declare forfeited the franchises of the Yonkers Railroad Company in South Broadway, Elm street and Walnut street and the Nepperhan avenue line, and to recover the \$50,000 worth of bonds placed by the Metropolitan Surety Company to the credit of the city to insure the faithful performance of the contract provisions by the railroad company. This action was the outcome of a resolution adopted by the Council on October 26 calling upon the receivers of the Union and Yonkers railroads to comply with the provisions of their franchises lest the grants be declared forfeited.

MISCELLANEOUS

Sanitary Drinking Fountains Planned

Louisville, Ky.—Alderman Ernest Horn is busily engaged arousing sentiment for an appropriation with which to supply Louisville with modern drinking fountains, equipped for man and beast, with a tap near the ground for use in filling buckets. Mr. Horn has secured blueprints and pictures of many types of fountains. The fountains will supplant the none too satisfactory and healthful pumps which have in the past formed such prominent street scenes.

Want Local Contractors Favored

Plainfield, N. J.—The Plainfield Trades Council, representing all trades in the city and borough, in a communication to the Common Council have demanded that local architects, builders and union mechanics be given preference on all municipal work. It was pointed out that the city fathers have had work done by outside contractors and union workmen have been brought from other cities when there were many local union men and taxpayers anxious and competent to do the job.

Agreement Near On River Front Project

Springfield, Mass.—That an agreement upon a plan for Springfield's river front improvement is likely to be reached within a month or two by the consulting engineers for the railroads and the city was the statement City Solicitor Wooden made recently at the hearing held before the Railroad Commissioners, in their capacity of River Front Commissioners. The plan or plans will first have to be submitted to the local advisory commission.

LEGAL NEWS

Summary and Notes of Recent Decisions—Rulings of Municipal Interest

PROCEEDINGS FOR TAKING WATER

Bryant vs. City of Pittsfield.—Records of the Board of Aldermen and of the Common Council, both showing that the Statutes of 1892, providing for an additional water supply for the city of Pittsfield, was "adopted * * * by a two-thirds aye vote," though not as explicit as they ought to be, sufficiently state that the act was adopted, according to its requirements, by a two-thirds vote of all the members of each branch of the City Council voting by yeas and nays. A reasonable presumption is to be made in favor of the action of a legislative body. The language of a record is to be construed favorably to the validity of the action of a legislative body, if it is fairly susceptible of such a construction. The taking of a deed of land on a brook, with the right to lay a pipe and construct an aqueduct, the erection of a dam and the construction of a reservoir on the brook, and the diversion of its water into a 10-inch main for use by the inhabitants of the city of Pittsfield, having been done professedly under the authority of the Statutes of 1892, providing for an additional water supply for the city of Pittsfield, are a "taking of water," within the meaning of that act. The Statutes of 1892, authorizing the city of Pittsfield to take certain waters for the purpose of an additional supply, to take by purchase or otherwise lands on or around the brooks and any waters and water rights connected therewith, to build and maintain all necessary dams and reservoirs, and to lay and maintain all necessary conduits, making the city liable for all damages for the taking, and providing that any person who fails to agree with the Board of Public Works as to the damages may have the same assessed as provided when land is taken for public highways, contemplates such a taking that a land owner and others interested would have proper notice of it. The compensation to which a land owner is entitled under the Statutes of 1892, providing for an additional water supply for the city of Pittsfield, cannot be recovered in an action of tort for an unlawful diversion of the water.—Supreme Judicial Court of Massachusetts.

STREET RAILROADS—MUNICIPAL REGULATION

City of Erie vs. Erie Traction Co.—Apart from any constitutional authority, municipalities can impose reasonable regulations upon street railway companies in the "operation" of their lines; and it does not follow that because Constitution, forbidding the construction of a street railway without the consent of the local authorities, deals only with the "construction," that municipalities are limited in the exercise of municipal functions to their "construction." A grant to a street railway company to operate its own lines on streets, subject to conditions and regulations, does not carry with it the right of the company obtaining such franchise to permit other companies to use its tracks without municipal consent and against municipal protest. A street railway company which has lost the municipal consent to the use of streets it once had by failure to perform the conditions imposed cannot, without municipal consent, secure the right to operate its cars by contract for the joint use of the tracks of another street railway company.—Supreme Court of Pennsylvania.

STREET RAILROADS—PAVEMENT MAINTENANCE

Schuster vs. Forty-Second St., M. & St. N. Ave. Ry. Co.—Laws of 1890 as amended by Laws of 1892 require every surface railroad corporation to keep a part of the street in repair under the supervision of local authorities. In case of neglect to make "pavements or repairs" after 30 days' notice to do so, the local authorities may make the same at the expense of the corporation. Held, that the provision for notice should not be construed as referring to repairs, and that such corporations are bound to keep the pavement of such portions of the streets occupied by them in repair without demand by the local authorities, notwithstanding such company is also required by Greater New York Charter to obtain a Borough President's permit before disturbing the surface of the street.—Court of Appeals of New York.

RAILROAD CONSOLIDATION—INVALIDITY

City of Niles vs. Benton Harbor-St. Joe Railway and Light Co.—A street railway company, formed by the consolidation of two street railway companies, cannot, when sued on an obligation incurred by one of the two, assert the invalidity of its own organization.—Supreme Court of Michigan.

REASONABLENESS OF CITY GAS REGULATION

State ex rel. Latshaw vs. Board of Water and Light Commissioners of City of Duluth et al.—Respondents, the Light and Water Board of Duluth, charged a net cash rate of 75 cents per 1,000 feet for gas furnished when payment was made by a given day, and 90 cents per 1,000 feet when payment was made afterward. Relator neglected to pay on that day, but subsequently tendered the amount he owed calculated at 75 cents per 1,000 feet. He afterwards tendered a reasonable advance deposit for payment for gas he applied to be furnished with. Respondent refused to accept the deposit until he had paid arrearages calculated at 90 cents per 1,000 feet and charges for shutting off and turning on the gas. Relator sought by mandamus to compel the Board to accept his deposit. The trial court discharged the writ. It is held:

(1) Under the city charter the respondent was authorized to adopt a rule to the effect that gas would not be supplied a delinquent person until that person's arrears for gas furnished had been paid.

(2) The home rule charter provision authorizing such a regulation had the force and effect of a legislative enactment.

(3) A public service corporation, like the respondent, must justly exercise its conferred powers so as to promote the purposes of its creation in the place at which it is to transact business and to render the services for which it is created for a compensatory and not excessive rate impartially determined, and so as not to discriminate improperly between different persons or property or classes of persons or property. The regulations must be reasonable and uniform in principle and operation.

(4) The judiciary ought not to interfere with the collection of such rates, established under legislative sanction, unless they are plainly and palpably in violation of law.

(5) The regulation here in controversy was valid.

(6) The respondent was justified in including in relator's arrearages the gross price for gas, which was found to be reasonable, and incidental charges for severing and making connections.—Supreme Court of Minnesota.

ORIGINAL STREET CONSTRUCTION

Guilfoyle's Executor vs. City of Maysville.—Until property once bears specifically the cost of building a pavement abutting it done on the order of the Council of the city, or by the city's express permission, indicated by act of its legislative body, there has not been an original construction of such improvement within a statute allowing the city to order the original construction of such improvement at the cost of the abutting owners. The time and manner for improving a city's streets are matters exclusively for the legislative department of the city, and, until that body acts, the city has not acted; and the fact that the abutting owners constructed a sidewalk does not prevent a city from ordering the construction of a sidewalk under a statute allowing it to order the original construction of a street improvement at the cost of the abutting owners, though it had knowledge that the owners were making the improvement. Generally the public is not estopped by the mere nonaction of the public officials. An indebtedness created by bonds for a street improvement as authorized by statute, allowing a city to order the original construction of a city improvement at the cost of abutting owners, and to issue ten-year bonds against the property not paying in cash, is not a municipal indebtedness within the Constitution, limiting municipal indebtedness. A city order for the original construction of a city improvement at the cost of abutting owners is not invalid as depriving such owners of their property without due process of law, where they have notice by publication of the ordinance for the improvement, as required by the statute.—Court of Appeals of Kentucky.

UNAUTHORIZED CONTRACT—ACCEPTANCE

Forrest City vs. Orgill Bros. & Co.—A city's contract to purchase water machinery, not authorized by any ordinance, resolution or order of the City Council, as required by Kirby's Digest, and which was not ratified by any formal action of the Council, was void. Where a city purchased water works machinery under a contract which was void for want of action by the Council, as required by Kirby's Digest, but the machinery was delivered, retained, and used by the city for nearly two years, the city thereby accepted the machinery, and the contract became executed by the seller, making the city liable for the price.—Supreme Court of Arkansas.

WARRANTS—DEMAND FOR PAYMENT

Farmers' Bank of Wickliffe vs. City of Wickliffe.—Suit does not lie on warrants drawn on a municipal treasurer without allegation and proof of their presentation to him with demand for payment, or of facts excusing presentation and demand.—Court of Appeals of Kentucky.

NEWS OF THE SOCIETIES

Wisconsin State Association of Chiefs of Police.—The Association of Chiefs of Police, the initial step in which was taken some time ago by Chief Baker, of Racine, and Chief Janssen, of Milwaukee, was formally launched at Milwaukee November 5, when thirty police heads from as many cities in the State met in the detective room at the Central Police Station and perfected the organization. Chief Baker, of Racine, was elected president; Chief August Scheck, of Sheboygan, vice-president, and Chief J. B. Webber, of La Crosse, secretary and treasurer. An executive committee, consisting of William F. Dowling, of Oshkosh; Thomas Shaughnessy, of Madison, and O. K. Mann, of Oconomowoc, was appointed, and it was decided to hold another meeting in Milwaukee on the second Tuesday in June. The organization is a revival of organized police methods in Wisconsin which has not existed for several years past, but which at one time proved a most efficient means of unifying the energies of the police departments of all cities and bringing about not only friendly relations, but concerted action and good results. It will be the object of the association also to watch legislation and use its influence in securing laws for the betterment of the departments. It is the purpose of the organization to expand so as to eventually take in city marshals and to work for the installation of Civil Service laws in all cities of 4,000 population or more. At present these laws extend to only cities having 10,000 or more population. The police heads who attended and became charter members were: Henry C. Baker, Racine; J. W. Brown, Neenah; F. W. Hoefler, Appleton; Thomas Malone, Wausau; Owen O'Hare, Kenosha; Edward J. O'Brien, Eau Claire; Thomas E. Hawley, Green Bay; Thomas Calder, Merrill; Henry F. Dowling, Oshkosh; John Shea, De Pere; August L. Gotsch, Beaver Dam; O. K. Mann, Oconomowoc; August Scheck, Sheboygan; George Groffmann, Manitowoc; Rufus P. Wands, Chippewa Falls; Thomas Shaughnessy, Madison; J. B. Webber, La Crosse; P. Gaffney, South Milwaukee; H. O. Krueger, Cudahy; W. O. Blunt, Monroe; Albert Sommerfeld, Juneau; John T. Janssen, Milwaukee, and H. C. Block, Watertown.

National Municipal League and the American Civic Association.—The program for the sixteenth national conference, Pittsburg, Pa., November 16-19, is as follows:

Monday, Nov. 16, 2:30 p. m.—Chamber of Commerce, Liberty avenue and Seventh street. Joint Meeting: J. Horace McFarland, Harrisburg, President of the American Civic Association, in the chair. Addresses of welcome on behalf of Pittsburg hosts: Hon. George W. Guthrie, Mayor; Lee S. Smith, President Pittsburg Chamber of Commerce. Reply on behalf of the National Municipal League: Horace E. Deming, Esq., New York City, Chairman of the Executive Committee. On behalf of the American Civic Association: President McFarland. "American Municipal Tendencies," by Clinton Rogers Woodruff, Philadelphia. "The Work of Boards of Health," by George A. Soper, Ph.D., New York City, Chairman Metropolitan Sewerage Commission of New York. The report will be discussed by Dr. Alexander C. Abbott, Chairman of the Committee on Municipal Health and Sanitation, and Superintendent of the Bureau of Health of Philadelphia; Dr. J. F. Edwards, Superintendent of the Pittsburg Board of Health; M. N. Baker, Montclair, N. J., Editor of "Engineering News," and President of the Montclair Board of Health; Robert W. DeForest, New York City, formerly Chairman of the Tenement

House Commission of Greater New York; and Benjamin C. Marsh, Secretary of the Committee on Congestion of Population in New York.

Monday, 8 p. m.—In the Second Presbyterian Church, Eighth street, near Penn avenue. Joint meeting. "The Civic Conditions of Industrial Communities; Being a Review of the results of the Pittsburg Survey," Robert W. DeForest, former Tenement House Commissioner, Vice-President of the New Jersey Central R. R., New York City, presiding. "The Pittsburg Survey," Robert W. DeForest; "Pittsburg's Civic Problem," Robert A. Woods, Director of the South End House, Boston; "The Municipal Responsibility of Democracy in an Industrial Community," Paul U. Kellogg, Editor of "Charities and the Commons," and Director of the Survey; "City Planning and Housing," by Grosvenor Atterbury, New York City; "The Function of Business Bodies in Improving Civic Conditions," by H. D. W. English, Pittsburg, formerly President Pittsburg Chamber of Commerce. Discussion by: Dr. Edward T. Devine, Editor of "Charities and the Commons," and Professor of Social Economy, Columbia University; Charles F. Weller, Secretary Charity Organization, Pittsburg, and formerly Chairman of President Roosevelt's Homes Commission of Washington; Arthur Vining Davis, Crucible Steel Company; William H. Matthews, Kingsley House, Pittsburg; Prof. Graham Taylor, of The Chicago Commons, and Professor of Sociology, Chicago University.

Tuesday 17, 10 a. m.—National Municipal League, Chamber of Commerce Rooms, head of Sixth avenue. Hon. Henry L. McCune, Kansas City, Mo., Third Vice-President, in the chair. Business meeting of the League. Report of the Secretary. Report of the Treasurer, George Burnham, Jr., Philadelphia. Report of the Executive Committee, Horace E. Deming, Esq., New York. Election of Officers and Executive Committee. John A. Butler, Milwaukee, Chairman Committee on Nominations. "The Present Status of Instruction in Municipal Government in American Colleges and Universities," by Professor William Bennett Munro, Harvard University, Chairman of the Committee on Co-ordination of Instruction in Municipal Government in American Colleges and Universities. "Municipal Affairs and the Liquor Problem," by Professor Augustus Raymond Hatton, Western Reserve University, Cleveland. Discussion by: John Koren, of Boston, who was the expert employed by the Committee of Fifty, which made its report some years ago, and of which James C. Carter, the first President of the National Municipal League, was a member; F. S. Spence, Toronto Board of Control; Rev. John P. Peters, Ph.D., D.D., New York City, Rector of Saint Michael's Church of New York, and chairman of the Committee of Fourteen to investigate the liquor problem in New York City; Hon. Charles Flisk, Mayor of Plainfield, N. J., and President of the New Jersey Excise Board; and A. Julius Freiberg, Cincinnati.

Tuesday, 10 a. m.—Conference on Nuisances, American Civic Association, Parish House, Trinity Church, Sixth avenue, near Smithfield street. President McFarland in the chair. "Cincinnati's Bill-board Campaign," by Murray Shipley; "Hartford's Co-operative Plan," by H. Leonard Beadle; "The Fight on Flies and Mosquitoes," by Dr. Daniel D. Jackson, New York City; "The Noise Nuisance," by Mrs. Isaac L. Rice, New York; "Dust," by Alerton S. Cushman, Assistant Director of Public Roads, Washington, D. C.

Tuesday, 2:30 p. m.—National Municipal League, Chamber of Commerce Rooms, Keenan Building. Hon. Henry L. McCune, Third Vice-President, in the chair. "Charter Tendencies in Recent Years," by Prof. John A. Fairlie; "The Initiative, Referendum and Recall in Charter Reform," by Robert Treat Paint, Jr., Boston; "The Need for Municipal Experts," by Prof. A. Lawrence Lowell, Harvard University; "The Washington Situation," by James B. Reynolds, New York City.

Tuesday, 2:30 p. m.—American Civic Association, Trinity Church Parish House. Local Improvement Session. Miss Mary Marshall Butler, Yonkers, New York, Vice-President of the American Civic Association, presiding. "The Problem of Clean Streets," Mrs. Caroline Bartlett Crane, Kalamazoo, Mich.; Richard T. Fox, Chicago; "The Socialization of a Garden," Mrs. M. F. Johnston, Richmond, Ind., President of the Richmond Art Association and Vice-President of the American Civic Association; "The Carlisle Plan: Susceptible of Indefinite Expansion," Mrs. Edward W. Biddle, Carlisle, Pa., President Pennsylvania State Federation of Women's Clubs; "More Beautiful Cemeteries," Howard Evarts Weed, of Chicago; "The Practical Results of the Municipal Control of Shade Trees," William Solatoff, Superintendent of the East Orange Shade Tree Commission.

Tuesday, 8 p. m.—American Civic Association, Carnegie Music Hall, near Hotel Schenley. Conservation Session. President McFarland presiding. "The Falls of Niagara and Other Waterways," Hon. Theodore E. Burton, Cleveland, O., member of Congress and Chairman of the Congressional Rivers and Harbors Committee; "Conservation and Common Sense," Gifford Pinchot, Washington, D. C., Chairman National Conservation Commission; "The Conservation of our National Resources," Walter L. Fisher, President of the Conservation League of America.

Wednesday, 10 a. m.—National Municipal League, Chamber of Commerce Rooms, Keenan Building. R. Fulton Cutting, New York City, Chairman of the Citizens' Union, in the chair. "Militant Political Work for Better Governed Cities," principal paper by Robert S. Binkerd, of the Buffalo Municipal League and New York Citizens' Union. Discussion by: Dr. E. W. Bemis, Cleveland, a friend and active supporter of Mayor Tom L. Johnson; John C. Winston, Esq., Philadelphia, Chairman of the Committee of Seventy; Elliott Hunt Pendleton, Cincinnati, Editor of "The Citizen"; John A. Butler, Esq., Milwaukee, Chairman of the Wisconsin Civil Service Reform Association; Camillus G. Kidder, Esq., Orange, N. J., Chairman Orange Board of Excise; Dwight F. Davis, Esq., St. Louis, Member of City Council.

Wednesday, 10 a. m.—American Civic Association, Trinity Church Parish House, Frederick L. Ford, Hartford, Conn., City Engineer and Vice-President of the American Civic Association, presiding. "The Association's Work," J. Horace McFarland, Harrisburg, Pa.; Report of the Treasurer, William B. Howland, Publisher of "The Outlook"; Reports of Officers and Executive Board; Amendments to the Constitution and By-Laws; Election of Officers and Executive Board; Reports from the Departments by the various Vice-Presidents, by Mrs. Agnes McGiffert Pound, Henry A. Barker, Graham Romeyn Taylor, Frederick L. Ford and other Vice-Presidents. Discussion.

Wednesday, 1 p. m.—Reception to the delegates and members of the National Municipal League and the American Civic Association by the Chamber of Commerce in its rooms in the Keenan Buildings.

Wednesday, 2:30 p. m.—National Municipal League, Chamber of Commerce Rooms, Keenan Building. Hon. George W. Guthrie, Mayor of Pittsburg and Member of the Executive Committee of the National Municipal League, in the chair. "The Municipal Library as an Investment," by Dr. Charles McCarthy, of the Legislative Reference Bureau, Madison, Wis.; and Horace E. Flack, Secretary of the Municipal Legislative Reference Bureau, Baltimore; "Ten Years of Uniform Municipal Reporting," by Hon. LeGrand Powers, Census Bureau, Washington, and Harvey S. Chase, Boston; "The Bureau of Municipal Research Idea," by Dr. William H. Allen, New York City, Secretary of the New York Bureau of Municipal Research.

Wednesday, 2:30 p. m.—American Civic Association, Trinity Church Parish House. President McFarland in the chair. "School Extension," Graham Romeyn Taylor, Chicago, Ill., Associate Editor of "Charities and the Commons," and Henry C. Campbell, Milwaukee, Wis., Editor of the "Milwaukee Journal"; "The Playground Movement," by Lee F. Hanmer, Traveling Secretary of the Playground Association of America; "School Gardens," Miss Louise Klein Miller; "Changes at Niagara," Dr. John W. Spencer, of Washington, D. C.; "The Work of the Taft Commission," Major Charles Keller, U. S. A., Washington, D. C. Discussion.

Wednesday, 8 p. m.—National Municipal League, Carnegie Music Hall, near Schenley Hotel. J. Horace McFarland, Member of the Executive Committee of the National Municipal League, in the chair. Address by Hon. George W. Guthrie, Mayor of Pittsburg, on "Some Fundamental Municipal Needs in Pennsylvania"; annual address by Hon. Charles J. Bonaparte, of Baltimore, Attorney-General of the United States and President of the National Municipal League, on "Criminal Laws as an Instrument to Give Effect to the People's Will." Immediately following this session an informal reception will be tendered the delegates to the League and Association by Mayor and Mrs. George W. Guthrie in the foyer of the Carnegie Music Hall, and at the same time the Carnegie Art Gallery and the whole building will be thrown open to the members of the conventions.

Thursday, 10 a. m.—National Municipal League, Chamber of Commerce Rooms, Keenan Building. Walter L. Fisher, Chicago, Fourth Vice-President, in the chair. "Control of Public Utilities," by Dr. B. H. Myers, President of the Wisconsin Commission; by Hon. Thomas M. Osborne, Auburn, formerly Mayor of Auburn, and now a member of the New York Public Utilities Commission No. 2; by Joseph B. East-

man, Boston, Secretary of the Public Franchise League of Boston. Discussion.

Thursday, 10 a. m.—American Civic Association, Trinity Church Parish House, President McFarland in the chair. "The Philosophy of City Planning," John Nolan, Cambridge, Mass.; "The Scope of City Planning," Frederick L. Ford, Hartford, Conn., City Engineer and Vice-President of the association's department of city making; "Scientific City Planning," "Municipal Art Commission," Dr. John Quincy Adams, Assistant Secretary of the New York Municipal Art Commission.

Thursday, 1:00 p. m.—National Municipal League, Duquesne Club, Sixth avenue, near Smithfield street; City Club luncheon and conference; George McAneny, President of the New York City Club, and chairman of the League's Committee on City Clubs, presiding.

Thursday, 2:30 p. m.—American Civic Association, Trinity Church Parish House, President McFarland in the chair. "Pennsylvania Railroad and the Smoke Nuisance," A. W. Gibbs, Altoona, Pa., General Superintendent of Motive Power, Pennsylvania Railroad. "Chicago and the Smoke Nuisance," Paul P. Bird, Chicago, Ill., Smoke Inspector. "How Pittsburgh is Overcoming the Smoke Nuisance," W. H. Rea, Pittsburgh Smoke Inspector. "Rural Improvement," Prof. Eugene Davenport, Dean of the Department of Agriculture, University of Illinois.

Thursday, 7:00 p. m.—Dinner to the Delegates to the National Municipal League and American Civic Association at the Hotel Schenley. There will be exhibited in connection with the sessions of the American Civic Association, by J. Otto Thilow, of Philadelphia, the splendid collection of lantern slides gathered by the association to illustrate civic conditions and the progress of the association's work.

Massachusetts Chiefs of Police.—The Massachusetts Chiefs of Police Union held their regular monthly meeting at the American House, Boston, November 5, and forty members attended. William R. Moffatt, Superintendent of the Lowell police, presided, and the subject discussed following the dinner was "Juvenile Law." The next meeting of the association will be held Thursday, December 24, in New Bedford, Mass.

Arlington (N. J.) Board of Trade.—A report has been submitted by George W. McClintock on the value of shade tree commissions in municipalities. The data cited were obtained from Mayor Louis M. Brock, of Kearny and the Newark Shade Tree Commission. A committee was named to wait upon the Council and suggest the formation of a shade tree commission.

Calendar of Meetings

November 18.

American Society of Civil Engineers.—Regular semi-monthly meeting, Society House, 220 West Fifty-seventh street, New York City.—Charles Warren Hunt, Secretary.

November 17-19.

Atlantic Deeper Waterways Conference.—Baltimore, Md.—J. Hampton Moore, President, Philadelphia, Pa.

November 17-20.

National Municipal League.—Annual meeting, Pittsburgh, Pa.—Clinton Rogers Woodruff, Secretary, 705 North American Building, Philadelphia, Pa.

American Civic Association.—Annual Meeting, Pittsburgh, Pa.—Clinton Rogers Woodruff, Secretary, 705 North American Building, Philadelphia, Pa.

November 17-20.

League of California Municipalities.—Eleventh Annual Convention, Sacramento.—H. A. Mason, Secretary, Mountain View, Cal.

November 30-December 1.

American Society of Refrigerating Engineers.—Annual Meeting, New York City.—W. H. Ross, Secretary, 154 Nassau street, New York City.

December 1-3.

Annual Conference of Sanitary Officers. Albany, N. Y.—Eugene H. Porter, State Commissioner of Health, Albany, N. Y.

December 1-4.

American Society of Mechanical Engineers.—Annual Meeting, New York City.—Calvin W. Rice, Secretary, 29 West 39th street, New York City.

December 9-11.

National Rivers and Harbors Congress.—Washington, D. C.

December 15-17.

American Institute of Architects.—Annual convention, Washington, D. C.—Glenn Brown, Secretary, The Octagon, Washington, D. C.

PERSONALS

BLODGETT, GARDNER S., Mayor of Burlington, Vt., recently celebrated his eighty-ninth birthday.

BRAYTON, WM. S., Town Clerk of Portsmouth, R. I., received 150 votes at the town election, exactly the same number received by his opponent, Geo. R. Hicks, and a special election will be necessary.

BREITMEYER, PHILIP, Commissioner of Parks and Boulevards of Detroit, Mich., defeated Mayor Wm. B. Thompson for re-election by a majority of 2,368.

EGGERT, HENRY, Hoboken, N. J., has been elected Water Commissioner, defeating Mr. Wendelken.

FALKENBACH, S. H., Assistant City Engineer of Columbus, O., has been succeeded by Mr. T. H. Brannon.

FORST, ISADOR, Louisville, Ky., retiring President of the Council, was presented with a handsome silver service by his associates.

GAUS, CHARLES H., Mayor of Albany, N. Y., has been elected State Comptroller.

HARRIS, W. D., Mayor of Ft. Worth, Tex., recently met with an accident which it was feared would result in blood poisoning.

HAUSSLING, JACOB, Mayor of Newark, N. J., has gone on a week's vacation to recover from the fatigue of his recent successful campaign.

HAYNES, J. C., Mayor of Minneapolis, Minn., was re-elected by a plurality of 451, defeating Mr. Huhn. Mayor Haynes has been an advocate of limited terms for public service franchises.

HEYBURN, WM., President of the Board of Aldermen of Louisville, Ky., has been re-elected.

HULL, GEO. N., East Providence, R. I., has been elected President of the Town Council.

KIMSEY, CHARLES, Chief of Police, Muskogee, Okla., accompanied by Alderman Prall, has gone to the Winding Stairway Mountains, in the Choctaw Basin, to hunt big game for a month.

LAMBERT, CHAS. ORTHO, formerly Mayor of Charleston, W. Va., died November 8 at the age of seventy-one.

LANDES, H. A., Mayor of Galveston, Tex., recently visited Houston for the purpose of inspecting the manual training departments in the public schools.

SIEFFERT, EDWARD, of Columbus, O., a member of the engineering corps on the construction of the water filtration plant, has resigned.

STEWART, DR. GEO. W., Saginaw, Mich., was elected Mayor, defeating Judge Emmett L. Beach by a plurality of 1,000.

STILES, HARRY G., Mayor of Allentown, Pa., died in his office November 8; he is the fourth Mayor of the city who has passed away during his term of office.

TODD, EDWARD A., Owosso, Mich., formerly Mayor, died November 9 at the age of eighty.

WILLIAMS, W. D., Ft. Worth, Tex., has received the nomination for Mayor in the Democratic city primary, which is equivalent to election; other officers nominated are: W. H. Slay, City Attorney; R. G. Littleton, Assessor and Collector; George Mulkey, Commissioner; also W. J. Gilvin, J. H. Maddox and T. J. Powell.

Mayors elected in New York recently were as follows, those marked * having been re-elected:

Cortlandt—John C. Barry.
Ithaca—Randolph Horton.
Lockport—George H. Minard.
Middletown—Robert Lawrence.*
Niagara Falls—Anthony C. Douglass.*
North Tonawanda—Louis Frick.
Ogdensburg—Edward W. Douglass.
Oneonta—Albert Morris.
Poughkeepsie—John K. Sague.*
Rensselaer—W. J. Rockefeller.*
Watervliet—E. J. Hanratta.

PATENT CLAIMS

901,993. Carbon Pencil of Electric-Arc Lights. John Nicholson, Frackville, Pa. Serial No. 428,009.

An electrode for an arc light comprising a cored carbon pencil having a metal cap and a metal strip secured to said cap and extending substantially centrally through the core, substantially as described.

902,027. Reinforced Cement Culvert. Clifford D. Voris, Crawfordsville, Ind. Serial No. 420,953.

A culvert or the like comprising a circumferentially corrugated metal tube having a plurality of apertures therethrough, a plurality of bars secured to the inside wall of the tube, a plurality of bars secured to the outside wall of the tube, the end portions of the last named bars being curved back, a cement body covering all of said metal parts and having a notch formed in one end thereof and a tongue formed at the other end thereof, and a flange formed at each end thereof, two or more of the sections thus formed being adapted to be connected tandem.

902,115. Garbage-Collecting Vehicle. Alfred G. Sharp, Bethesda, Md. Serial No. 397,627.

In a garbage collecting vehicle, a body of metal or other suitable material, running on wheels and provided with means for compressing the contents.

902,139. Attachment for Road-Machines. John T. Eady, Carrollton, Ga. Serial No. 418,516.

The combination with a scraper, of a bar or member extending longitudinally of the scraper and arranged to project from either end of the same for tearing down embankments at the side of a road, and means for adjustably securing the bar or member to the scraper.

902,401. Water-Purifying and Like Apparatus. Adolphe L. Helwig, Paris, France. Serial No. 389,863.

In a measuring device for a water purifying apparatus, the combination of a rotating wheel provided with a rotary shaft and a plurality of measuring compartments; a water supply for filling said compartments as the wheel rotates; a tank into which said compartments discharge; stops on said wheel; a pivoted lever projecting in the path of said stops to control the movement of said wheel; means to control said lever; adjustable measuring cups, means for pivotally mounting said cups on said shaft so they may revolve therewith and said cups adapted to hold predetermined quantities of chemicals; a chute having an inclined bottom into which said cups are adapted to discharge, and itself discharging into said tank; and an adjustable stop on said chute adapted to tip said cups as they revolve, whereby said compartments may discharge definite quantities of water, and said cups proportional quantities of chemicals into said tank, substantially as described.

902,411. Apparatus for Lighting and Extinguishing Gas-Lamps. Herbert H. Johnson, Forbes, and Edward Moln, Sydney, New South Wales, Australia. Serial No. 373,839.

In a gas regulator, the combination of a pair of communicating gasometers, one of which is adapted to receive gas from a gas main and the other gasometer being adapted for attachment to an outlet pipe, a gas controlling device operable by the receiving gasometer for regulating the flow of gas therefrom to the other gasometer, and a device operable by the gasometer to be connected to the outlet pipe and adapted to cooperate with the gasometer which operates the gas controlling device for retaining the latter in open position during normal pressure in the main.

902,531. Automatic Constant-Discharge Water-Gate. Frank W. Hanna, Defiance, Ia., assignor of one-half to Joseph H. Root, Port Byron, N. Y. Serial No. 447,176.

The combination of a movable water gate, an intake mechanically connected therewith receiving water from the fluctuating water surface of a canal or reservoir and a mechanism hydraulically operated by water received through the said intake and likewise mechanically connected with the said gate, the whole producing automatically a constant discharge from the said canal or reservoir.

902,888. Fluid-Meter. John W. Ledoux, Swarthmore, Pa., assignor to Simplex Valve & Meter Company, Camden, N. J., a Corporation of New Jersey. Serial No. 312,787.

An apparatus of the class described comprising a revoluble vane wheel, a vessel having means for discharging a fluid to said wheel under a constant head, an escapement for controlling the revolutions of said wheel, mechanism operated by said wheel, an indicating device operated step by step through the action of said mechanism, and means whereby a liquid column regulates the rate of said indicating device.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage
Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation
Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Alabama.....	Gadsden.....	Nov. 19.....	Paving certain sidewalks.....	W. M. Wilson, City Engineer.
Ohio.....	Oakley.....	Nov. 19, noon.....	Constructing 4-foot cement sidewalks on certain streets.....	Oscar Nosche, Vil. Clk., Cin. P. O.
New York.....	New York.....	Nov. 19, noon.....	Repairing asphalt pavement on East and North Rivers.....	Allen N. Spooner, Com'r of Docks.
New York.....	Brooklyn.....	Nov. 19, 3 p.m.....	Paving or repaving asphalt on concrete, grading, etc.....	Bird S. Coler, Boro. President.
Pennsylvania.....	York.....	Nov. 20.....	Bldg. 5,070 ft. State road, Dillsburg Boro., York Co.....	Jos. W. Hunter, St. Hwy. Dept., Harrisburg.
Pennsylvania.....	Clearfield.....	Nov. 20.....	Bldg. 6,370 ft. State road in Pike twp., Clearfield Co.....	State Hwy. Dept., Harrisburg.
Indiana.....	Indianapolis.....	Nov. 20.....	Asphalt, brick and bitulithic paving, etc., several streets.....	Blaine Miller, City Engineer.
Indiana.....	Wabash.....	Nov. 20, 10 a.m.....	Constructing gravel road.....	J. P. Nofztger, County Aud.
Ohio.....	Bowling Green.....	Nov. 20.....	Improving Lehman Ave. from Main St. to railroad.....	Alex. Williamson, City Clerk.
Ohio.....	Cincinnati.....	Nov. 20, noon.....	Bldg. embankments, New Rich. pike; also repairing Cleaves rd.; also Foley road in Delhi township.....	Fred. Drehs, County Clerk.
Virginia.....	Roanoke.....	Nov. 21, noon.....	Paving with Hassam or concrete portion Franklin road.....	W. B. Bates, City Engineer.
Ohio.....	East Liverpool.....	Nov. 23, noon.....	Brick paving curb, etc., Penn. Ave. and Sheridan St.....	A. S. Hughes, Clerk Bd. Pub. Serv.
Ohio.....	Newark.....	Nov. 23.....	Grading, macadamizing, draining, 1,000 ft. road Lima twp.....	County Commissioners.
Florida.....	Jacksonville.....	Nov. 23, 2:30 p.m.....	Vit. paving block and grading, 666 sq. yds; stone curb, 600 ft.....	Philip Prioleau, City Engineer.
Ohio.....	Akron.....	Nov. 23.....	Paving a portion of Russell Ave.....	Ray F. Hamlin, Sec'y Bd. Pub. Serv.
New York.....	New B'ght'n N.Y.....	Nov. 24.....	Wood block repaving, 6,200 sq. yds., etc., Herberton Ave.....	Geo. Cromwell, Boro President.
New York.....	L. I. City, N. Y.....	Nov. 24, 11 a.m.....	Wood and asphalt block, granite paving on sand and concrete.....	George Cromwell, Pres. Boro. Rich.
New York.....	Brooklyn.....	Nov. 25, 11 a.m.....	Asphalt paving and repaving on concrete, cement walks, etc.....	Bird S. Coler, Boro President.
Pennsylvania.....	Uniontown.....	Nov. 25.....	Bldg. 26,100 ft. road Menallen tp., 6,654 ft. S. Union twp.....	State Highway Dept., Harrisburg.
Washington.....	Aberdeen.....	Nov. 25, 5 p.m.....	Brick asphalt on wood block paving, cement sidewalks and curb, clearing and filling, storm sewers, etc., 3 sts.; \$111,220.....	P. F. Clark, City Clerk.
Ohio.....	Cincinnati.....	Nov. 27, noon.....	Repairing Springfield pike; also avenue from Montgomery to Remington; also treating Ohio pike with Tarvia.....	Stanley Struble, Pres. County Com'rs
Ohio.....	Columbus.....	Nov. 27, noon.....	Furn. and rolling 2,400 tons crushed limestone on W. 5th Ave.....	John T. Scott, Clk. Co. Com'rs.
New Jersey.....	Hillsdale.....	Nov. 28, 8:30 p.m.....	Macadamizing and grading 2,656 miles 8 streets; also 5.33 miles.....	Albert Mohurting, Chm. Twp. Com.
Ecuador.....	Guayaquil.....	Dec. 1.....	Paving and sewer work.....	Sewerage and Water Board.
Michigan.....	Muskegon.....	Dec. 7.....	Brick paving certain streets.....	B. H. Tellman, City Recorder.
Indiana.....	Vincennes.....	Dec. 8, 2 p.m.....	Bldg. 2 gravel roads, 3,205 and 1,300 ft. long.....	John T. Scott, County Auditor.
Indiana.....	Bloomfield.....	Dec. 8.....	Bldg. gravel and macadam road, Stockton township.....	Peter M. Cook, County Auditor.
Indiana.....	Muncie.....	Dec. 9.....	Gravel roads, etc., 3 twps; brick road Centre twp., all Del. Co.....	County Commissioners.
WATER SUPPLY				
Michigan.....	Grand Rapids.....	Nov. 19, 8 p.m.....	Bldg. and erecting 12,000,000-gal. vert. trip. exp. pump engine.....	S. A. Freshney, Bd. Pub. Works.
Texas.....	Ft. McIntosh.....	Nov. 20, 10 a.m.....	Furn. and install, new boiler, purif. apparatus, etc.....	Col. John L. Clem, U. S. A., San Ant.
Texas.....	Dallas.....	Nov. 20, 3 p.m.....	Furn. carload of valves f.o.b. Dallas; two 30 x 60-in. sluice gates; two 30-in. and one 8-in. gate valve, low pressure, and four 24-in., four 20-in., three 18-in., six 16-in.; eight 12-in.; fourteen 10-in., six 8-in., fifty-six 6-in., six 4-in. gate valves, high pressure.....	J. B. Winslett, City Secretary.
Dist. of Col'bia.....	Washington.....	Nov. 21, noon.....	Aux. water system and fire protection, Home for Aged.....	Jay J. Morrow, Eng'r Com'r.
Florida.....	Pensacola.....	Nov. 21, 11 a.m.....	Installing water mains, pump, mach., etc., at navy yard.....	Commandant, Navy Yard.
Colorado.....	Las Animas.....	Nov. 23, 2 p.m.....	Complete new pump plant, inc. bldg. and equip. steel tank or stand-pipe; 23,000 ft. c. i. pipe extensions.....	W. R. Murphy, Town Engineer.
Pennsylvania.....	Pittsburg.....	Nov. 23, noon.....	Furn. and install. equip. in extension of filtration works.....	A. B. Shepherd, Act. Dir. Pub. Wks.
Delaware.....	Wilmington.....	Nov. 23, 10:30 a.m.....	Constructing covered slow sand filtration plant, with filter, water reservoir, sand washing apparatus, etc.....	John A. Kienle, Ch. Eng. Water Bd.
Illinois.....	Chicago.....	Nov. 23.....	Water supply, fire protecc., etc., for Cook Co. Infirm., 18 miles out.....	Wm. McLaren, Supt. Co. Pub. Serv.
Pennsylvania.....	Pittsburg.....	Nov. 23.....	Cleaning interior surface, 1,960 ft. 8-in. and 8,409 ft. 6-in. c. i. main.....	Geo. W. Guthrie, Mayor.
New York.....	Amsterdam.....	Nov. 24, 8 p.m.....	Furn. c. i. pipe and specials for Hanns Creek Conduit No. 2, inc. 3,538 tons 30-in., 3,844 tons 24-in.; 16 1-2 tons smaller sizes, all straight piping; 25 tons 30-in.; 20 tons 24-in. specials; 16 tons 30-in. and 20 tons 24-in. inspection castings.....	Chas. C. Yund, Pres. Water Bd.
Washington.....	Wenatchee.....	Nov. 24, noon.....	Bldg. pumping station and pipe tunnel; furn. pump, motor and starting panel; reservoir complete etc.....	Roy Zahren, City Engineer.
Brazil.....	Parahyba.....	Nov. 24.....	Bldg. water supply system, etc., for city.....	Govt. State of Parahyba.
Georgia.....	Augusta.....	Nov. 24, 4 p.m.....	Furnishing and erecting pumping engine of 6,000,000-gal.daily capacity and steam plant of 450 h.p.....	Nisbet Wingfield, City Eng.
Illinois.....	Pekin.....	Nov. 24.....	Water tube boilers, comp. condensing steam engines and cent. pumps for plant on Ill. Riv., 17 miles south.....	Harmon Eng. Co., Peoria.
Pennsylvania.....	Reading.....	Nov. 24, 7:30 p.m.....	Bldg. 8,000 ft. 60-in. rein. concrete conduit, etc., for Maiden Crk. filters.....	Edward Elbert, Pres. Water Com'rs.
California.....	San Francisco.....	Nov. 25, 3 p.m.....	Two salt water pumping stations.....	Board of Public Works.
New York.....	Brooklyn.....	Nov. 25.....	Furn. and delivering piglead in Brooklyn security, \$4,000.....	John H. O'Brien, Com. W. S., G. & E.
Wyoming.....	Cheyenne.....	Nov. 30.....	Bldg. masonry dam, inc. 7,500 cu. yds. concrete, 3,847 cu. yds. earth fill, 348 cu. yds. stone rip-rap; also removing 547 cu. yds. loose rock and 1,643 cu. yds. solid rock.....	C. C. Carlisle, City Engineer.
California.....	Los Angeles.....	Nov. 30, 11 a.m.....	Constructing 11 miles open and lined ditch work of Antelope Sec., Los Angeles aqueduct, inc. 58,625 ft. canal lining, with cover and back fill: 283,140 cu. yds. excavating; 446 cu. yds. plain concrete in culverts; 100 cu. yds. rubber concrete; lining 280 lin. ft. of tunnel, now excavated.....	Board of Public Works.
Kansas.....	Burlington.....	Dec. 1.....	Pumping machinery to cost \$7,000.....	Burns & McDonnell, K. C. Mo., Eng's.
New York.....	New York.....	Dec. 1, 11 a.m.....	Constructing north half of Walkill Pressure Tunnel.....	J. Waldo Smith, Bd. Water Supply.
Illinois.....	Yorkville.....	Dec. 1, 8 p.m.....	Constructing a concrete reservoir for village, inc. 15 h.p. gasoline engine, 250-gal. rotary pump, 5,915 ft. 6-in. pipe, laid; pump house; H. D. Hallett, Aurora, Eng'r.....	Dr. McClellan, Chm. W. W. Com.
Georgia.....	Covington.....	Dec. 2.....	Bldg. w.w., inc. 400 tons 6 to 10-in. c. i. pipe, valves, hydrants, 15 x 115 ft. stand. pipe, 2 comp. pump engines, turbine pump and motor, brick pump. station, settling and clear water basins and sewer system.....	C. C. Brooks, Chm. Bd. Com'rs.
Massachusetts.....	Springfield.....	Dec. 4, 2 p.m.....	Bldg. earth dam; Little River Water Supply, Contract No. 5 to contain 135,000 cu. yds. rolled embankment, 3 miles of roads, gate house, spillway, etc., cost, \$200,000.....	E. E. Lochridge, Ch. Eng. Water Bd.
Mississippi.....	Meridian.....	Dec. 8, 6 p.m.....	Furn. and erect. 5,000,000-gal. hori. cross compound crank and flywheel pump engine; also bldg. rein. concrete reservoir.....	C. C. Dunn, Pres. W. W. Com.
Kansas.....	Augusta.....	Dec. 20.....	Constructing water works.....	Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Eng'rs.
Florida.....	Daytona.....	Jan. 1.....	Constructing water works for city.....	D. D. & C. M. Rogers, Engineers.

SEWERAGE

New York.....	Rye.....	Nov. 18, 8 p.m.	Bldg. sanitary sewers and disposal plant, inc. 90,000 ft. 8 to 18-in. vit. pipe sewers, etc., laid complete, much rock exc.; 12,600 ft. iron pipe sewers, siphons and force main, 4 to 16-in.; 1,200 ft. sub-aqueous iron effluent outlet into L. I. Sound; 2 small pumping stations complete; sewage tanks and coke filter berls; agricultural tile, piling, earthwork, etc.	G. Everett Hill, N. Y. City, Eng'r. Bird S. Coler, Boro. President. J. C. Ely, Pres. Bd. Pub. Serv. W. B. Bates, City Engineer. Board of Public Service. Holabird & Roche, Monadnock, Block, Architects. Ray F. Hamlin, Sec'y Bd. Pub. Serv.
New York.....	Brooklyn.....	Nov. 18.....	Bldg. 36-in. brick sewer, 73d St.; 24, 15 and 12-in. pipe, other sts.	
Ohio.....	Dayton.....	Nov. 20, noon.....	Bldg. 3,800 ft. 8-in. vit. pipe, 6 to 10 ft. cut, manholes, etc.	
Virginia.....	Roanoke.....	Nov. 21, noon.....	Constructing two sewers.	
Ohio.....	Mt. Vernon.....	Nov. 21.....	Laying 300 ft. 15-in. 100 ft. 12-in. vit. pipe sewer, etc.	
Illinois.....	Chicago.....	Nov. 23.....	Sewers and sewage disposal for new Cook Co. Infirmary.	
Ohio.....	Akron.....	Nov. 23.....	Laying sewers, portions 4 streets; also other sewers.	
Pennsylvania.....	Polk.....	Nov. 23, 3 p.m.	Bldg. sewer system and disposal plant for St. Inst. for Feeble-Minded, inc. 2 miles 6 x 12-in. sewers, etc., 3,700 cu. yds. excavation, 1,000 cu. yds. concrete, 30 tons c. i. pipe, 3,500 ft. sewer pipe, etc.	J. M. Murdoch, Supt. Institute Feeble Minded. Wise & Watson, Boro. Eng'rs. Capt. F. C. Boggs, Gen. Purch. Agt. Govt. State of Parahyba. Lawrence Gresser, Pres. Boro. Qu'ns. J. A. Omberg, Jr., Eng'r. H. W. Troutman, City Engineer. Bird S. Coler, Boro. President. F. G. Ward, Com'r Pub. Works. Blaine H. Miller, City Engineer. C. H. Reynolds, City Engineer.
New Jersey.....	East Rutherford.....	Nov. 23, 8 p.m.	Completing sewer system and disposal plant; abandoned cont.	
Dist. of Col'bia.....	Washington.....	Nov. 23.....	Furnishing vit. sewer pipe, etc., for Isth. Canal Com.	
Brazil.....	Parahyba.....	Nov. 24.....	Bldg. drainage system, etc., for city.	
New York.....	L. I. City, N. Y.	Nov. 24, 11 a.m.	Bldg. sewers and basins, temporary sewers and catch basins.	
Tennessee.....	Memphis.....	Nov. 25, noon.....	Bldg. system, sanitary sewers, 13,000 ft. 6 to 15-in.	
Washington.....	Aberdeen.....	Nov. 25.....	Storm sewers, paving, etc., 3 sts., cost, \$111,220.	
New York.....	Brooklyn.....	Nov. 25.....	Bldg. sewers, 3 sts.; 3,084 ft. 12-in., 165 ft. 15-in., 263 ft. 18-in.	
New York.....	Buffalo.....	Nov. 25.....	Laying 10 and 12-in. tile sewer in Cambridge Ave.	
Indiana.....	Indianapolis.....	Nov. 26.....	Bldg. sewers in 3 streets and under market house.	
Iowa.....	Fort Dodge.....	Nov. 26, 5 p.m.	Bldg. 7 blocks, 8-in. sanitary, 1 block 10-in. storm sewer.	
Michigan.....	Grand Rapids.....	Nov. 27, 8 p.m.	Sewage pump mach., inc. four 40-in.; four 24-in., two 18-in. centrifugal pumps; four 175-h.p., two 75-h.p., two 60-h.p. and three 30 h.p. elec. motors; vacuum pumps, motors, etc.	
Nebraska.....	Lexington.....	Nov. 27.....	Constructing pipe sewers, to cost \$16,000.	
Ohio.....	Dayton.....	Nov. 27.....	Bldg. 3,800 ft. 8-in. vit. pipe; also 1,070 ft. 12 to 24-in. pipe.	
Dist. of Col'bia.....	Washington.....	Nov. 30.....	Constructing concrete sewers.	
New Jersey.....	Trenton.....	Dec. 1.....	Bldg. sewer in portion of Taylor Alley and Christopher Ave.	
Ecuador.....	Guayaquil.....	Dec. 1.....	Constructing sewerage system.	
Michigan.....	Muskegon.....	Dec. 7.....	Constructing sanitary sewers in certain streets.	

BRIDGES

New York.....	New York.....	Nov. 19, 2 p.m.	Furn. steel lumber and hardware supplies for bridges.	J. W. Stevenson, Com'r of Bridges.
Pennsylvania.....	Philadelphia.....	Nov. 20.....	Bldg. suspension bridge to Intake House No. 1, Torresdale.	Geo. R. Stearns, Dir. Pub. Wks.
North Carolina.....	Beaufort.....	Nov. 20, noon.....	Bldg. steel draw-span bridge, pile and concrete foundation.	Capt. E. I. Brown, Eng. Corps, U.S.A.
Florida.....	Pensacola.....	Nov. 21, noon.....	Bldg. wooden bridge over Little Bayou.	A. M. McMillan, Clk. Co. Com'rs.
Montana.....	Missoula.....	Nov. 23, 10 a.m.	Bldg. bridge over Missoula River at Higgins Ave., \$5,000 check.	D. I. Andrews, Chm. Co. Com'rs.
South Carolina.....	Columbia.....	Nov. 23.....	Laying concrete walks and curb around Court House.	T. I. Weston, County Eng'r.
Oklahoma.....	Pawnee.....	Nov. 23.....	Constructing bridge for County.	John W. Griesel, Engineer.
Pennsylvania.....	Monongahela.....	Nov. 23, noon.....	Bldg. joint County bridge, three 450 ft. spans on 2 concrete abutments and 2 stone river piers with pipe and cone foundation.	F. P. Booth, County Controller.
Virginia.....	Hanover.....	Nov. 25.....	Bldg. steel and rein. concrete bridge over Chickahominy River.	Thos. R. Puller, Chm. Joint Com.
South Carolina.....	Greenville.....	Nov. 25.....	Bldg. new span to bridge over Saluda River.	J. P. Goodwin, County Superv.
Missouri.....	Kansas City.....	Dec. 7, noon.....	Bldg. steel super. and concrete footings, Main St. viad.	Commercial Imp. Co., Dwight Bldg.
Mississippi.....	Grenada.....	Dec. 7.....	Bldg. iron bridge over Bogue Creek at Tie Plant.	County Commissioners.
Indiana.....	Princeton.....	Dec. 8, 11 a.m.	Constructing 33 bridges for County.	Gibson County Commissioners.
Ohio.....	Columbus.....	Dec. 16, noon.....	Bldg. masonry approaches and sub-str. of viaduct, Mound St.	E. W. Hirsch, Sec'y Bd. Pub. Serv.
Nebraska.....	Fairbury.....	Jan. 1.....	Yearly bridge contract for Jefferson County.	F. A. Houston, County Clerk.
Indiana.....	Rensselaer.....	Jan. 12.....	Constructing bridge over Kanku River.	J. H. Leatherman, County Aud.

LIGHTING AND ELECTRICITY

Pennsylvania.....	Tarentum.....	Nov. 21.....	For 75 kw., 500 volt belt driven, d.c. generator, etc., switch-board 1 1-2 x 24 x 48 ft. with switches, etc., f.o.b. Tarentum.	W. A. Gibson, Boro. Sec'y.
Dist. of Col'bia.....	Washington.....	Nov. 23, 10:30 a.m.	Electrical supplies, etc., for Isthmian Canal Com'n.	F. C. Boggs, Gen. Pur. Agt., Isth. C.C.
Brazil.....	Parahyba.....	Nov. 24.....	Bldg. lighting system, etc., for city.	Govt. State of Parahyba.
Pennsylvania.....	Johnstown.....	Nov. 25.....	Elec. light. sts.; alleys, pub. bldgs., etc., for 5 and 10 yrs. from January 1.	Geo. E. Hamilton, City Clerk.
Florida.....	Tampa.....	Nov. 27.....	Lighting streets with 100 electric arc lights.	W. Lesley Brown, Acting Mayor.
Ohio.....	Richwood.....	Nov. 28, noon.....	Lighting streets with 35 arc lamps, 2,000 c. p. for 10 years.	Ray L. Jordan, Village Clerk.
Georgia.....	Atlanta.....	Nov. 30, 10 a.m.	Furn., etc., 25-h.p. electric motor, etc., for U. S. Penitentiary.	Dept. Justice, Washington, D. C.
Texas.....	Ft. Sam Houston.....	Dec. 2.....	Extending elec. line and additional street lights.	L. J. Fleming, Constr. Q. M.
Indiana.....	Goshen.....	Dec. 10, 9:30 a.m.	Install. \$725 acetylene plant at Co. Infirmary.	D. O. Batchelor, County Aud.
Connecticut.....	Hartford.....	Jan. 4, 11 a.m.	Lighting streets for 1 or 5 years from June 1, 1909.	Jas. P. Berry, Sec'y Bd. C. & S.

MISCELLANEOUS

New York.....	New York.....	Nov. 19, 3 p.m.	Furn. 2 gaso. lawn mowers, top-soil, plants, etc., Prospect Park.	Henry Smith, Pres. Park Bd.
New York.....	New York.....	Nov. 19, noon.....	Furn. 5,000 bbls. Class 1-A and 20,000 bags Class 1-B cement.	Allen N. Spooner, Com'r of Docks.
New York.....	New York.....	Nov. 20.....	Dredging 200,000 cu. yds. on No. River; also 25,000 cu. yds.	Allen N. Spooner, Com'r of Docks.
Kentucky.....	Louisville.....	Nov. 20, noon.....	Furn. and placing necessary marble work in City Hall annex.	Board of Public Works.
New York.....	New York.....	Nov. 20, noon.....	Col. and removal of ashes, garbage, etc., from Bronx dists., etc.	Foster Crowell, Com'r St. Cleaning.
Ontario.....	Ottawa.....	Nov. 20.....	Bldg. wharf at Partridge Island; ext. wharf, Harvey Bank.	Nap. Tessler, Sec'y Dept. Pub. Wks.
Pennsylvania.....	Erie.....	Nov. 21.....	Bldg. superstructure on public dock extension.	Dock Commissioner.
New York.....	Canajoharie.....	Nov. 23.....	Bldg. 900 ft. vit. multiple duct conduit, etc., Church St.	Chas. E. Perry, Engineer.
Illinois.....	Chicago.....	Nov. 23.....	Erecting bath house, inc. electric fixtures, etc.	John J. Hanberg, Com'r Pub. Wks.
California.....	Oakland.....	Nov. 25, 11 a.m.	Constructing 3 fire-engine houses.	W. B. Fawcett, Sec'y Bd. Pub. Wks.
California.....	San Francisco.....	Nov. 25, 3 p.m.	Multi-stage turbine pumps and hori. turbines for 2 fire boats.	Board of Public Works.
New York.....	Newark.....	Nov. 26.....	Erecting \$25,000 brick village hall; J. M. Pratt, Arch.	Village Board of Trustees.
California.....	Los Angeles.....	Nov. 26.....	Furnishing a quantity of lumber.	Board of Public Works.
Dist. of Col'bia.....	Washington.....	Nov. 27.....	Furn. 4 steel dump cars, Circ. 477 Isth. Canal Com'n.	Capt. F. C. Boggs, Purch. Agent.
Ohio.....	Tiffin.....	Dec. 1.....	Work on Silver Creek, principally rock excav.; cost, \$15,000.	C. J. Peters, County Engineer.
North Dakota.....	Grand Forks.....	Dec. 7, 5 p.m.	Furnishing 1,000 ft. 2 1-2-in. single jacket cotton fire hose.	John D. Taylor, Mayor.

STREET IMPROVEMENTS

Mobile, Ala.—Board of Public Works has received petition for improvement of Centre street west from Catharine; also Clay street.—Stewart Brooks, President.

Montgomery, Ala.—Council has passed ordinances for paving Madison avenue, North Decatur street, High, South Perry and South McDonough streets to be paved with clay gravel; also Mobile street and Forest avenue; paving was ordered on South Hull and Clanton streets; Perry street will be paved with brick, asphalt or bitulithic.

Tucson, Ariz.—Council has passed an ordinance providing for paving Park avenue from Speedway to Fifth street.

Fort Smith, Ark.—Council has ordered curbs and gutters laid on several streets.—D. B. Sparks, City Clerk.

Hayward, Cal.—Sale of \$4,000 bonds insures the continued improvement of Castro street; trustees decided to override the protest of property owners on that street east of Jackson street and install concrete curbs and gutters; money is to be paid out of the bond issue, as is the cost of a concrete culvert over Sulphur Creek and crosswalks in the business center of the town; Board

also adopted plans for the improvement of A. B. Main, First and Castro streets, the work to be commenced at an early date.

Oakland, Cal.—Council has decided to change and re-establish grade on fourteen streets.—F. R. Thompson, City Clerk.

Oakland, Cal.—Council has carried a motion that the city attorney prepare a resolution of intention to open up Sixth avenue to the water front; also passed resolutions to pave East Twelfth street from Thirteenth to Twenty-third avenues; to change grades on College avenue between Broadway and Manila avenue; also an ordinance authorizing the Board of Public Works to advertise for bids patching bituminized and other paved streets of the city and appropriating \$8,500 for the same.

Woodland, Cal.—City Trustees urge the necessity for the repairing of Main street and have instructed the City Engineer to draw plans and specifications as soon as possible.

Bridgeport, Conn.—Council will order the widening of Golden Hill street from Main to Water street.—Chas. Biltz, Director of Public Works.

Bridgeport, Conn.—Public Works Director Biltz has declared himself in favor of tear-

ing up every inch of asphalt pavement in the city next spring and substituting wood blocks, and will urge special appropriation for the project.

Washington, D. C.—Congressman D. F. Lafan announces that he will introduce at the next session of Congress a bill providing for the construction of a boulevard from Washington to the battlefield of Gettysburg, cost \$7,000,000, and be a National memorial to President Lincoln.

Washington, D. C.—A report has been received from an American Consul in western Europe, in which he states that the municipal authorities in the city in which he is located have advertised for tenders for the construction of a new boulevard, the cost of which is estimated at about \$8,500,000. Tenders will be opened on December 10, 1908, the work to be completed in eight years. Copies of the specifications may be obtained from the Bureau of Manufactures.—Address No. 2769, Bureau of Manufactures.

Aurora, Ill.—Council has passed an ordinance for a cement sidewalk on Walnut street and received a resolution for a brick or stone crossing at Hammond and Illinois avenues.—E. J. Raymond, City Clerk.

Cairo, Ill.—Council has received petitions

for sidewalk on Seventh and Fourteenth streets; also Washington avenue.—R. A. Hatcher, City Clerk.

Chicago, Ill.—Plans for the building of a new tunnel in La Salle street will be submitted to Commissioner of Public Works Hanberg for his approval this week; Chicago Railways Company is ready to proceed with the work as soon as the plans are approved by the city; new tunnel will be built of concrete and will cost approximately \$1,000,000.

Elgin, Ill.—Council has ordered the temporary repairing of Dundee avenue pending the making of street improvement.—C. E. Plum, City Engineer.

Streator, Ill.—The Board of Local Improvements has decided to present ordinances to the Council for the paving of East Elm street from Shabbona to Illinois; distance, one block; Tenth street from Bloomington street west; distance, about two blocks; and South Monroe street from Spring to Cottage, a distance of four blocks; proposition of paving East Main street from the present termination of the paving to Otter Creek street was discussed but action deferred.

Sterling, Ill.—Council has decided to improve several streets with cement walks.

Indianapolis, Ind.—A petition for the paving of two miles of road in Perry County with brick has been presented to the County Commissioners; J. T. Roberts, President of the Indiana Central University, is one of the signers.

Indianapolis, Ind.—The Finance Committee is considering transfer of \$25,000 from various funds for the maintenance of the municipal asphalt plant.—Blaine Miller, City Engineer.

Indianapolis, Ind.—The County Commissioners are considering the improvement of the National road from Cumberland toward Indianapolis for three miles with brick roadway.

Jeffersonville, Ind.—The improvement of Court avenue from Wall to Meigs, and from Pearl to Ohio and Sixth street from Kentucky avenue to Missouri avenue, has been determined on; contracts will be awarded as soon as possible, and the work will be inaugurated in the spring.

Jeffersonville, Ind.—Plans and specifications are being prepared for granitoid pavements, stone curbing and vitrified brick gutters and intersections on a portion of Sixth street.—Victor W. Lyon, City Engineer.

Leavenworth, Kan.—The Board of Commissioners has passed ordinances for re-grading and paving Third street.—H. C. Knipe, Commissioner of Streets.

Topeka, Kan.—Council will soon take action on petitions recently presented for paving on West Seventh, West Eighth, Lincoln and Lawrence streets and Woodlawn avenue.

Clinton, Ky.—Citizens have voted \$15,000 bonds for street improvements.—W. T. Walker, City Clerk.

Eminence, Ky.—The people have voted \$15,000 bonds for the construction and improvement of city streets.

Maysville, Ky.—Council has ordered Law and Ordinance Committee to bring in ordinance looking toward construction of sidewalks all over the city wherever needed.

Warsaw, Ky.—Warsaw has voted an issue of \$7,500 for street improvements for 30 per cent. assessment.

New Orleans, La.—Comptroller has authority to advertise for the paving of three streets with granitoid, four with asphalt and one with bitulithic.—Wm. J. Hardee, City Engineer.

New Orleans, La.—Bids will be received shortly for paving with granite block portions of Dryades, Ursuline, Calliope streets and Bienville square.

St. Bernard, La.—St. Bernard County will vote on levying tax for construction and maintenance of roads and bridges.—Address Police Jury.

Baltimore, Md.—Board of Estimates has approved ordinances for the opening of Belt street, between Fort avenue and Clement street, and Glover and Rose streets.

Baltimore, Md.—The paving ordinances just approved by the Board of Public Improvements bring the paving plans for next year a stage nearer to conclusive determination; the proposals are yet to go before the Board of Estimates; the streets selected for improvement during 1909 are such as will not be soon cut up by the sewer workmen; in some of these streets sewers have already been laid, and other streets that have been selected for improvement will most likely be avoided entirely in sewer-building by the use of center-block alleyways.

Fair Hill, Md.—A corps of surveyors appointed by Good Roads Commission, have started a survey for permanent road between Blue Ball and Fair Hill.

Battle Creek, Mich.—The Board of Works has adopted resolutions ordering the people on West Main from Washington to Cass and on East Main from the tracks of the

Grand Trunk to Cliff street to prepare for paving next summer by making all necessary water, gas and sewer connections at once.

Grand Rapids, Mich.—Council has received resolutions for grading and graveling So. College avenue and paving E. Leonard street with brick.—L. W. Anderson, City Engineer.

Duluth, Minn.—The West Duluth Commercial Club is backing a project to bring about the construction of a new wagon road leading to West Duluth from over the hill, the idea being to establish an easy grade into the city; cost, \$1,000. L. A. Barnes, Chairman. J. J. Frey, H. H. Phelps and Andy Miles were the three selected for the work.

Duluth, Minn.—A commission has been named to construct a joint highway between St. Louis and Itasca counties between the eleventh and fifteenth districts.

St. Paul, Minn.—The City Good Roads Commission will ask the Conference Committee for \$28,000 for improving five roadways leading to the business section of the city; City Engineer L. W. Rundlett also urges upon the Board the need of improving Como avenue from Rice street to Dale street; he is of the opinion that the street should be made 60 feet wide, should be macadamized and finished with curbing, at a cost of \$27,000.

Union Springs, Mo.—The citizens have voted bonds for road improvements.—A. E. Singleton, Judge of Probate.

Bayonne, N. J.—Council will repave ordinance for repaving Broadway in order to overcome legal technicalities, and the street will be repaved the entire distance from the Kills to the canal, a distance of more than three miles; various kinds of pavements have been suggested.

Camden, N. J.—Council has passed ordinances directing the improvement of Linden street from Point to Front street, by paving with Belgian blocks on a 4-inch concrete foundation; also directing the paving of Louis street from Mt. Vernon street to Kaighn avenue, with Belgian blocks on a sand foundation.—I. V. Bradley, City Clerk.

Hackensack, N. J.—A movement is on for a boulevard across Bergen County from the Palisades, as projected by the Board of Freeholders; Lawyer J. A. C. Johnson of Englewood, Mayor S. Wood McClave of Cliffside, Mayor A. J. Carleton of Edgewater, Frank E. Knox of Grantwood, Lawyer H. E. Leveridge of Ridgefield, J. A. Karet of Hackensack and Cyril De Wryall, President of the Ridgefield Park Board of Village Trustees, are interested.

Jersey City, N. J.—Mayor H. Otto Witt-penn and President John J. Voorhees of the Finance Commission, have announced that no asphalt, wood block or bitulithic pavements will be laid in Jersey City for some years to come because of expense; the city will return to the use of stone blocks.

Long Branch, N. J.—Council has received ordinances for improving Fifth avenue from the Jersey Southern Railroad to Joline avenue in said city by the construction of sidewalks and curbing on both sides of said avenue; also for the construction of a curb on both sides of Willow avenue from Division street to Westwood avenue.—Bryant B. Newcomb, Clerk.

Perth Amboy, N. J.—Council has passed ordinance to establish the grade of Penn street, from Hall avenue to Eagle avenue; Mary street, from Harrington street to lands of Henry Maurer & Son; Kennedy street from Elizabeth avenue to lands of Alpine Cemetery Association; Harrington street, from Hanson avenue to lands of the cemetery; Kamm street, from Hanson avenue to Mary street, and Elizabeth avenue, from Brace avenue to the Maurer lands.

Trenton, N. J.—Council has passed an ordinance ordering curbing and paving of lots on seven streets, also the paving of Taylor street from Monmouth to Chestnut avenue.

Westmont, N. J.—Citizens have voted an appropriation for street improvements.

Wildwood, N. J.—A State highway is to be constructed connecting Wildwood with the mainland shore road; cost, about \$25,000.

Brooklyn, N. Y.—The Board of Estimate and Apportionment is considering the improvement of Coney Island avenue, between Fort Hamilton and Neptune avenues, by parking the same and shifting the tracks of the Coney Island and Brooklyn Railroad, now on the westerly side of the avenue, to the parkway, to run through the center; parkway plan has already had the approval of the City Engineers, the Board of Aldermen and the Mayor.

Brooklyn, N. Y.—An ordinance has been approved for the issue of \$100,000 bonds for maintenance and repair of streets.—Bird S. Coler, Borough President.

Geneva, N. Y.—The Board of Public Works is considering plans for next year's paving; Washington street and Reed road and possibly Elm and Colt streets will be improved.

Huntington, L. I., N. Y.—The Huntington Association, made up largely of Brooklyn and Manhattan summer residents, has taken up the proposition for a proper system of sewage disposal for Huntington, and it is believed will carry it to a successful termination; Counselor I. R. Swezey, Jr., has been retained by the Association.

Rochester, N. Y.—Council is considering resurfacing Alexander street; cost, \$3,500; grading Swenton street, \$700; grading and walks on Elgen street, \$1,300, and walks on other streets.

Utica, N. Y.—The Clerk has been directed to advertise for proposals for constructing a sidewalk in Buffalo street and another in Wetmore street; a resolution has been adopted for grading Floyd and Bryant streets, the surplus earth to be used for filling in the sewer along the New York Central right-of-way.—Thomas Wheeler, Mayor.

Utica, N. Y.—City Engineer O'Brien has presented plans for a catch basin at Eagle and Mohawk streets, in Bryant and Floyd streets, and at Genesee and Elizabeth streets.

New Bern, N. C.—The Board of Aldermen is considering the paving of numerous streets.

Grand Forks, N. D.—Council has decided to pave certain streets with sandstone.

Minot, N. D.—The City Auditor will take bids for graveling streets.

Akron, O.—Residents of Allen street have petitioned Council for improvement of that street from Power to South street; petition was received for cinder sidewalks on Arlington street.

Ashland, O.—Petition has been presented to Council by the property owners on Grant street asking for the improvement of that street by grading and paving from Walnut street to Bank street; the street will be 28 feet in width.

Ashtabula, O.—Board of Public Service will relay pavement and change grade of East Fisk and Park streets; also grade Manning street.—A. J. Richardson, Clerk; L. A. Amsden, City Engineer.

Belaire, O.—An ordinance has been passed by Council determining to proceed with the improvement of Plum alley from Central avenue to 35th street by grading, paving and curbing.

Canfield, O.—From \$40,000 bond issue it is proposed to build the new pike road two miles and a half north and east from Canfield, completing the allotted five miles to connect with the proposed extension of the Boardman and Austintown roads, and giving an improved road from Canfield to Youngstown.

Cincinnati, O.—Council has received petitions ordering Chief Engineer to submit approximate cost of improving Badgley avenue and paving Montrose street with brick; Board of Public Service has estimated cost of improving Kenyon avenue, \$6,243.80; Barr street, with asphalt, \$6,227.

Columbus, O.—The Engineering Department of the Board of Health has plans for graveling County road from corporation lines to municipal garbage plant; one route takes in Greenlawn avenue; cost, \$1,550 to \$2,280; a second route, Schwartz and Stemmel roads, cost \$2,228, and a third route, one most probably accepted, along Remck run sewer, cost, \$1,550.

Columbus, O.—The Board of Public Service plans to do considerable paving next year and the work will be started just as early as the weather will permit; with construction of viaducts on the west side the indications are that there will be a large amount of city work to be performed next year.—E. W. Hirsch, Secretary, Board of Public Service.

Hamilton, O.—Council has passed a resolution declaring it necessary to pave Court street alley from Front to Third street with sheet asphalt.

Ironton, O.—Ordinance providing for the establishment of a grade on Fifth street from Pine to Heplar has been passed; the Street Committee has recommended passage of ordinance for establishment of grade of Fifth street from Pine street to Heplar.

Niles, O.—Council has passed ordinance authorizing issue of \$1,000 bonds for the extension of Burt street from Fenton to Mason street; residents of Second street have made application for a grade for sidewalks, and the City Engineer was instructed to place grade at his earliest convenience.

Portsmouth, O.—Paving bonds were authorized to the amount of \$51,000; these bonds are for the paving of Eighth, Grant and Prospect streets.

Toledo, O.—Council has passed ordinances establishing grade of Chestnut and Kosciusko streets and Central avenue.

Guthrie, Okla.—Council has ordered nine miles of paving; streets north of Cleveland avenue, Vine excepted, will be paved with rock asphalt; Noble avenue will be paved with rock asphalt; Oklahoma, Second, Velas, Springer, Division and First

will be paved with brick; bid advertised as soon as Engineer files profiles.

Lawton, Okla.—Petitions are being circulated for the pavement of four blocks of D and all of C avenues.

Muskogee, Okla.—Council has ordered the improving of Houston and Dayton streets and East Broadway.—Morgan Caraway, Clerk.

Tulsa, Okla.—Petition of property owners to pave Elgin avenue with asphalt has been received; the petition will be canvassed by the Engineer and appropriate action taken; resolutions have passed Council calling for the paving of South Main from Thirteenth to Fifteenth with oil macadam and Archer avenue from Cheyenne to Katy tracks, with brick.

Bradford, Pa.—Council has passed third reading ordinance relative to sidewalks on Thompson avenue, South Kendall avenue and Edna avenue and the Euclid avenue sewer.

Franklin, Pa.—The Street Committee has been directed to macadamize Fourth street from Washington to Catherine at once, and a gutter laid on Elm avenue crossing; the C. G. & W. to macadamize its portion of said street; crossings were also ordered at King and Second streets.

Harrisburg, Pa.—Council has passed ordinance for the opening of Front street from Reilly to Division streets; upon motion of Mr. Sheetz referred to the City Engineer in order that the cost of the improvement may be learned; ordinance for the opening of Thirteenth street south of Sycamore was passed.

Harrisburg, Pa.—As soon as two sewers are laid bids will be asked for 30,000 square yards of street paving.

Hazleton, Pa.—Common Council has adopted resolution that the City Clerk and the Clerk of Council be directed to have published an ordinance for the paving of North Laurel street from Green street to Diamond avenue and that further action by the body on the bill be postponed until the first meeting in December; Select Council referred ordinance providing for the paving of Diamond avenue, from Carson to Alter streets, with vitrified brick or other approved material.

Lemoine, Pa.—Citizens have voted \$15,000 bonds for opening, grading and improving streets in this borough.—Oscar Wolfensburg, Secretary to Council.

Lewisburg, Pa.—The County Commissioners have signed the petition to the State Highway for an appropriation for the paving of Market street, Lewisburg, and the matter is now before the State Highway Department for approval.

Philadelphia, Pa.—Prospect Park Council has decided to place a coating of oil on Lincoln avenue, the main street of the borough, from one end to the other; distance over a mile.

Philadelphia, Pa.—Council has received a memorial from the Joint Executive Committee on Harbor Improvements urging the immediate improvement of the Delaware water front; improvements consist of widening Vine street and building two modern piers.

Philadelphia, Pa.—Select Council has passed ordinance authorizing Board of Surveys to revise lines and grades in territory bounded by Tower street, Walnut lane, Main street and Pennsdaie street.

Pittsburg, Pa.—The Board of Public Works has ordered the paving of Western avenue; cost, \$3,000; repaving Penn avenue, cost, \$8,000; repaving of Fifth avenue, cost, \$8,000.

Pittsburg, Pa.—Plans for holding mass meetings in Castle Shannon, Mount Lebanon and elsewhere in the interest of an improvement and widening of the West Liberty road, have been partially completed and a general meeting will likely be held in the Mount Lebanon County Club this month.

Scranton, Pa.—Mayor J. Benj. Dimmick has signed Councilman Lewis' second call for plans and specifications for paving Scranton street with stone; other resolutions signed by the Mayor were:

For walks on Larch street; crosswalks at Ridge Row and Webster avenue; the same on Vandeventer boulevard and East Park avenue; for the extension of Washburn street; asking why the City Solicitor has not done anything in the matter of widening Vine street and for a catch basin at Fifteenth avenue and Division street.

Providence, R. I.—Electors have voted \$6,000 bonds for improvement of State highways.

Aberdeen, S. D.—No bids were received for the construction of a creosote block, brick or asphalt pavement in alley between First and Second avenues.—F. W. Raymond, City Auditor.

Bristol, Tenn.—The State Street Improvement Committee has under consideration the improvement of this street in conjunction with the city of Bristol, Va.

Chattanooga, Tenn.—Mayor Crabtree and

City Engineer Hooke made a trip to Ross-ville and Missionary avenues and both returned strongly in the opinion that grade crossings should not be allowed; committee appointed employed engineers to go over the situation and draw plans for elevated tracks, which plan the Alabama Great Southern Railway declare unpracticable; question will be decided soon.

Chattanooga, Tenn.—The Board of Public Works is discussing grades of several streets and widening of McCullie avenue.

Cleveland, Tenn.—Mitchell, Minnis & Co., Birmingham, Ala., have been engaged to prepare plans and specifications for municipal sidewalks.

Memphis, Tenn.—One mile of McLean street, between Poplar and Old Raleigh road, will be improved in the spring.

Rogersville, Tenn.—Hawkins County has just succeeded in making a sale of \$40,000 bonds, the proceeds of which will be applied to building good roads in the county.

Dallas, Tex.—Commissioner Doran has favorably recommended the matter of an underground crossing at the intersection of Hall street and the M. K. & T. railway in North Dallas; citizens of Oak Lawn have petitioned for this improvement; cost, about \$6,000; in addition to excavating beneath the tracks of the railway, it will be necessary to improve the street for some distance on either side, and over the branch just north of the railroad is to be built a new concrete bridge; cost \$4,000.

Galveston, Tex.—The shelling of 40th street is to be commenced very soon; city will inaugurate work at an early date for the permanent protection of the west end slope on 40th street and extending from Broadway to Avenue P; surveyors are now at work running lines and putting in sidewalk and curb grades; plans are to shell 40th street from Broadway to Avenue P, also Avenue P from 40th to 41st street, then 41st street from Avenues P to R; later on the shelling will be extended to Avenue S, which in a short time is to be fixed and regraded and shelled.—J. D. Kelley, City Secretary.

Houston, Tex.—Formal protest against the policy of letting the contract for the paving of the Harrisburg road without first advertising for bids has been filed with the City Council by Commissioner Marmion; he quoted from the city charter in backing up his protest.

Mount Pleasant, Tex.—Construction of about 20 miles of walks is contemplated.

Temple, Tex.—Council has adopted resolution favoring the holding of an election to vote bonds in the sum of \$45,000 for street paving purposes.

Wallisville, Texas.—An election will be held to vote on the question of issuing \$50,000 Chambers County road bonds.—Address County Auditor.

Norfolk, Va.—The resolution from the Public Improvement Committee for an appropriation of \$1,423.20 for paving Reilly street from Virginia to Cove street canal, has been adopted by the Board of Aldermen; the Board also adopted ordinance recommended by Finance Committee providing an appropriation of \$60,000 for improvement of Westover and Graydon avenues, Claremont, Lehigh and Westover streets; the Board of Control has recommended that the sidewalks of Rose avenue from Willoughby avenue to Hamlin be paved with No. 2 block.—W. T. Brooke, City Engineer.

Norfolk, Va.—Council has received a petition for improvement of northern end of Reilly and Walke streets.—W. T. Brooke, City Engineer.

Attleboro, Vt.—Work on the stretch of macadam the State intends to build on Pleasant street will not begin till spring.—Superintendent Smith, Engineer Farrington.

Seattle, Wash.—Council has ordered concrete walks on Fourteenth avenue, Florentia street and Fourteenth avenue, North East; also planking on Harrison street and paving Stewart street and grading Shelby street.—R. H. Thomson, City Engineer.

Seattle, Wash.—The Street Committee of Council has recommended for adoption a petition from J. F. Douglas, Secretary of the Metropolitan Buildings Company, asking permission to pave Fourth avenue between Seneca and Union streets with creosoted wood blocks; Mr. Douglas also asked that his company be allowed to proceed at once with the laying of water mains and sewers in the same district, and this was recommended.

Tacoma, Wash.—Council has received resolutions for improvement of North Thirty-ninth, South Fifty-fourth, Washington and Jennet streets.

Vancouver, Wash.—Council has decided to pave First and Second streets between Main and Washington streets.

Wellsburg, W. Va.—Brook County voters rejected \$300,000 bond issue for improvement of main roads.

Fond du Lac, Wis.—Fond du Lac pro-

poses to pave fourteen streets, six miles, providing the report submitted by the Committee on Public Improvements is adopted by Council; brick, asphalt and cement will be used.

Menasha, Wis.—Cement walks have been ordered on several streets.

Milwaukee, Wis.—The County Board has authorized expenditure of \$30,000 for good roads and county parks.

Milwaukee, Wis.—Arrangements have been made to complete the sewers and center curbing on Washington boulevard so that crushed stone can be hauled at once; this will make it possible to complete the street west to Fifty-third street; plans will then be made to carry the new boulevard to Wauwatosa; \$75,000 has been spent on the street this year.

Racine, Wis.—Council has passed resolutions ordering the grading and paving of Freeman court and a brick pavement on Packard avenue.

Winnipeg, Man., Can.—Asphalt paving is projected on Sutherland avenue to cost \$46,000; Mountain avenue, cost \$20,000; also on Nairn avenue, cost \$17,995, with another section on the latter street to cost \$19,000; several small sewers are also projected.

Winnipeg, Man., Can.—Cedar block paving is proposed on Redwood avenue, cost \$9,181, and asphalt on Sutherland avenue, cost \$46,268.

Beamsville, Ont., Can.—The Ontario Railway and Municipal Board has authorized this city to expend \$11,000 for granolithic sidewalks.

Tweed, Ont., Can.—This city has been authorized to expend \$5,000 for granolithic sidewalks.

SEWERAGE

Tucson, Ariz.—Council has passed ordinance No. 297 for the construction of an 8-inch lateral sewer in Kennedy street from Main street to Stone avenue.—Frank S. Treat, Recorder.

Redlands, Cal.—City Trustees have accepted the plans of City Engineer George Hackley for a storm water drain in Garden street from the Country Club to Cajon street, and a right-of-way has been secured at the lower part of the section, through property where the ditch is to be put in; the cost of the ditch as proposed may reach as high as \$25,000.

Redlands, Cal.—City Trustees have received petition for sewer in Tenth street from Citrus to Fern avenue; also for waste pipes across San Bernadino avenue and West State street.

San Pedro, Cal.—Engineer Whitman has prepared plans for an outfall sewer at foot of First street; cost, \$4,300.

Willows, Cal.—Bonds have been voted for sewers.

Athens, Ga.—City will build 17 sewers; total cost, \$28,401.40; material will be purchased immediately.—City Engineer Barnett.

Aiton, Ill.—Plans have been prepared by City Engineer Thomas Long for building sewers in the East Side; also in State-Main streets to North Side; distance, 1½ to 2 miles.—Board of Local Improvements.

Chicago, Ill.—The Board of Cook County Commissioners will receive bids for the water supply and fire protection; also for sewers and sewage disposal plant for the infirmary to be erected at Oak Forest.—Wm. McLaren, Superintendent of Public Service.

Lincoln, Ill.—Council has passed ordinance providing a vit. pipe sewer in Hamilton street, from Delavan street to Denver avenue.

Jeffersonville, Ind.—Mayor E. N. Flynn and the heads of the various departments have decided to construct an immense sewer extending from the north end of Locust street to the river at Pearl street; the territory to be drained is embraced in all that part of the city not affected by the Mechanic street and the Spring street sewers; work will be started as early in the spring as possible.

Mishawaka, Ind.—No bids were received for the Elm street sewer; matter will rest until 1909.

Des Moines, Ia.—Council has voted to curb Forest avenue from Fourth to Fifth street, and Fourth street, from Forest avenue to Orchard street; also approved plans and specifications for curbing East Ninth street from Washington to Thompson street.

Des Moines, Ia.—City Engineer has prepared plans for a sewer system to be constructed in Woodlawn place; bids for 13,000 linear feet of 10-inch vitrified tile pipe laterals, 12, 15, 18 and 24-inch vitrified tile pipe; 1,000 linear feet concrete sewer; 24-inch manholes and catch basins, will be asked for about December 1; cost, \$25,000.

Dubuque, Ia.—Plans are being prepared by City Engineer Paul Ilg, for constructing 4,000 feet of 8-inch tile sewer in Middle street; bids will be asked in the spring.

Webster City, Ia.—A hearing will be held

November 30 on the construction of a drainage ditch.

Columbus, Kan.—Steps are being taken to install a sewer system to cost about \$50,000.—Address Robeson Brothers.

Sterling, Kan.—Council has decided to construct a sewerage system and would like to communicate with sanitary engineers with a view to retaining one to do the preliminary work.—J. D. Fair, Mayor.

Washington, Kan.—Plans have been prepared by City Engineers Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., for a sanitary sewer system.—M. O. Reitzel, Clerk.

Franklin, Ky.—City has voted \$20,000 bonds for construction of sewer system.

Lexington, Ky.—Mayor Skain will refer \$25,000 sewer bond ordinance, voted, to Council some time this month, or as soon as ordinance can be drawn; bonds will then be sold; system will be constructed next year.

Louisville, Ky.—The Sewerage Commissioners have authorized the preparation of plans for the construction of Section F of the southern outfall sewer.—J. B. F. Breed, Chief Engineer.

Baltimore, Md.—Sewerage Commission will expend \$100,000 annually in construction of storm water drains until 1914, when the entire system will be practically completed; about \$1,100,000 will have then been expended.—Calvin W. Hendrick, Chief Engineer.

Baltimore, Md.—A temporary disposal plant west of Garrison avenue, in order to give Forest Park a system of sanitary drainage, is being planned; cost, \$100,000.—B. T. Fendall, City Engineer.

Brookline, Mass.—The Town Engineer has been authorized to confer with the Engineering Department of the City of Newton with regard to the extension of the Saw Mill Brook Valley sewer through a small portion of Newton, so as to permit of providing a sewer for the upper part of Boylston; and has also been instructed to interview the property owner through whose land this proposed extension will run with a view to obtaining a lease; the Superintendent of Streets has been authorized to install catch basins on the northerly side of Dwight street, on Toxteth street above Bowker street, on the southerly side of Addington road, near Winthrop road, and on Auburn street west of Auburn Place.

Lowell, Mass.—An order transferring \$10,000 from streets to the general treasury fund, then to sewers, has been adopted by Council.

Lowell, Mass.—The Committee on appropriations has voted to recommend an appropriation of \$2,000 for improvement in sanitation at the Lincoln school.

Lynn, Mass.—The Committee on Finance has voted to report to Council a \$11,000 bond order to finance the installation of a pumping station and connecting pipes, which will do away with the present outlet; City Engineer Leland has looked over the situation, and his plan for connecting the sewer main from the Newhall street district with the Broad street sewer involves an expenditure of \$7,000 for motor pumps and well and \$4,000 for the connecting sewer.

Caro, Mich.—Engineers are preparing plans for installing complete sewerage system.

Battle Creek, Mich.—Preparations have been made by the Board of Public Works to care for the immense amount of sewage from the new shops of the Grand Trunk; as now planned, this will all be pumped uphill through an iron sewer to Porter street, where it will be emptied into the gravity sewer system of the city; this iron sewer was recommended by resolution adopted by the Board and the extension of the Porter street sewer past the Toasted Corn Flake factory was also ordered to connect with this.

East Lansing, Mich.—Estimates have been prepared for constructing water and sewer system at a cost of \$15,000.

Jackson, Mich.—The citizens have voted \$40,000 bonds for the completion of the Harmon drain trunk sewer.

Zeeland, Mich.—An election will be held in the spring to vote on issue of bonds for construction of sanitary sewerage system.

Correll, Minn.—Bids will be received by the Town Board of Akron for building a grade 12 feet wide and 2 feet high.—P. C. Scholberg, Town Clerk.

St. Paul, Minn.—Council is considering ordinance providing for an issue of \$75,000 sewer bonds.

Waseca, Minn.—Council has decided to complete the sewerage system and build another septic tank.

St. Joseph, Mo.—City will expend \$12,000 on the construction of main sewers.—G. F. Barnes, Clerk, Board Public Works.

Millville, N. J.—State Sewer Commission has ordered city to have sewage disposal plant in commission July 1, 1909.

Perth Amboy, N. J.—The Board of Aldermen has given notice of intention to lay

12-inch pipe sewer in Kearny avenue, from Harrison place southerly.

Trenton, N. J.—Council has passed ordinances for sewers in Christoff avenue and Taylor alley.—H. B. Salter, City Clerk.

Auburn, N. Y.—The Board of Estimate and Control has approved \$48,000 bonds for sewage disposal plant and site; specifications for enlarging surface water sewer on Parker street were adopted.

Binghamton, N. Y.—Sewers will be constructed on Helen street, which will connect Main street with the Fourth Ward trunk sewer and on Main street, which will then be paved.

Buffalo, N. Y.—Council has adopted resolutions for the construction of sewers in several streets.—Francis G. Ward, Commissioner of Public Works.

Troy, N. Y.—Council has received petition for construction of 8-inch tile sewer in Glen avenue, between Winnie and Shannard avenues.

Wampsville, N. Y.—Plans are being prepared for a plant for the disposal of sewage of the county buildings at Wampsville.—J. A. Loyster, Chairman Building Committee, Cazenovia; George S. Tibbitts, Engineer.

Akron, O.—Council has received petitions for private sewers in Atlas and Oberlin streets.

Alliance, O.—A civil engineer of the C. & P. Railroad, in company with Supervisor Patterson of the same road, recently conferred with the Board of Public Service on the storm sewer to be placed under the track of the road; the matter was left with these railroad officials and City Engineer Gyger to agree upon plans.

Ashtabula, O.—Council has ordered plans and specifications for the sewerage of West Prospect street, from Nathan street to city limits, one mile in length; also sewer on Joseph and Briggs streets, from Cherry to Coyne street, to connect two sewers already laid; about half mile of sewer needed; also sewer on Colorado street, from Station street to the west end of Cole street. The Board of Public Service has decided to lay drain pipes in Manning street; the Board also plans the cleaning and relaying of the Park street sewer.—A. L. Richardson, Clerk; L. A. Amsden, City Engineer.

Niles, O.—Council has passed an ordinance to cover a bond issue of \$2,000 for the purchase of a site for a sewage disposal plant.

Overland, O.—A resolution has been passed by Council declaring it necessary to lay a sewer on West College street west of Prospect street for a distance of 500 feet.

Portsmouth, O.—An estimate of \$633.40 for sanitary sewer in the alley west of Chillicothe from Seventh to Ninth streets has been approved.

Toledo, O.—Ordinances have been passed by Council for determining to proceed with the local sewer No. 1058 and sewer No. 1054.

Toledo, O.—East Side citizens, through a committee of fifteen, have asked Council for additional sewer facilities from Front and Main streets to the river to prevent flooding of basements every time there is a heavy rain; cost is estimated at \$10,000.—George Scheets, Chairman of Sewer Committee.

Guthrie, Okla.—Council has ordered City Engineer to prepare plans for construction of main sewer from Fourth to Twentieth street; also plans and estimates for storm sewer on Ninth street.

Conemaugh, Pa.—Citizens have voted \$30,000 bonds for sewer and street improvements.

Elwood City, Pa.—The State Health Department has approved the plans prepared for the construction of an intercepting sewer and sewage disposal plant; plans call for an intercepting sewer from Clyde street to the site of the proposed disposal plant; disposal plant will be built along the creek and include two sprinkling filters, each 65x161 feet, with filtering beds from 4½ to 6½ feet deep; five terraces with sprinkling nozzles and a sedimentation basin 60x30 feet and 5 feet deep; the entire plant will be about 700 feet in length.—R. Pratt, Consulting Engineer.

Hazleton, Pa.—Council has received an ordinance providing for the construction of a 15-inch terra-cotta pipe sewer on Lincoln street.

Philadelphia, Pa.—An ordinance has been introduced in Council to provide for a special election next spring to vote a loan of \$425,000 to complete the city's sanitary sewerage system.

Sharon, Pa.—South Sharon has practically decided to accede to the demand of the State Board of Health and build a sewage disposal plant; Council contemplates a bond issue next February to provide the money needed.

South Bethlehem, Pa.—Borough Engineer Neumeyer has recommended that sewers be provided for disposition of storm water and house drainage.

Southmont (Johnstown Post-office), Pa.—C. P. Collins, Johnstown, has prepared plans for disposal systems for this place, providing both for surface drainage and house sewage; the outlet of the system will be at sewage filtration and sedimentation beds of the most approved type, and at a distance of about a mile from the town.

Washington, Pa.—Town will again ask bids for building a water works and sewage disposal plant.—J. K. Weir, Secretary, Town Council.

Wilkes-Barre, Pa.—All bids opened October 29 for laying 1½ miles of brick sewers have been rejected as excessive; D. M. Rosser Engineering Company, Wilkes-Barre, was lowest bidder at \$119,985.

Wilson, Pa.—Engineers Manesse and Earl, 424 Fourth avenue, Pittsburg, are preparing plans for 1,500 feet of 10 to 20-inch tile sewer on Locust street, borough of Wilson.—Oliver Stokes, Borough Clerk.

Spartanburg, S. C.—City agrees to pay one-half for installation of sewerage system on Converse Heights providing city's part does not exceed \$3,000; work to be done under City Engineer.

Aberdeen, S. D.—Council has authorized the Mayor to purchase pipe for the storm sewer to drain the slough north of the Milwaukee depot; the Council voted to condemn the iron electric poles.

Bristol, Tenn.—A petition has been presented by the property owners on Broad street requesting the Board of Public Works to allow them to construct a 6-inch sewer pipe along Broad and Anderson streets, between Eleventh and Twelfth; those who petitioned were: W. O. Bennett, E. B. Wexler, S. M. Cloyd, A. C. Harkleroad, J. E. Arrants, T. M. Shumaker and D. E. Burmitt.

Cleveland, Tenn.—The city contemplates sewer construction; Mitchell, Minnis & Co., of Birmingham, Ala., are probable engineers.

Dallas, Tex.—A committee named by Decree Park Improvement League to handle plumbing contracts for sewer connection has been instructed to investigate the matter thoroughly, and award the contract; approximately 150 homes will be parties to the contract for sewer contracts, and it is intended to have one firm do all the work.

Dallas, Tex.—The Committee on Water and Sewerage, Colonial Hill Improvement Company, has reported that plans had already been adopted for the installation of fine sewer service in such sections of the Colonial Hill section as are not already served, and that same would be laid within a year; also that Commissioner Sullivan has under consideration the matter of improved water service for the Hill, and that this may be expected within a reasonable time.

Fort Worth, Tex.—Third Ward Delegates to Platform Convention will urge better sanitary sewage system for the East Side.

Teague, Tex.—The Attorney General has approved an issue of \$42,000 5 per cent. 40-year water works bonds.

Wichita Falls, Tex.—Attorney General has approved an issue of \$12,000 sewer bonds.

Norfolk, Va.—Resolutions providing for an appropriation of \$2,915 is now in hands of Mayor.

Winchester, Va.—A movement is under way looking to the construction of a sewerage system; probable cost, \$50,000.

Tacoma, Wash.—Council has received petition for sewer in Pacific Heights.

Northfork, W. Va.—The Northfork Realty Company is preparing plans for a sewerage system for townsite development.

Winnipeg, Man., Can.—The Board of Control will take bids for furnishing 12,000 feet of sewer pipe.—H. Peterson, Secretary.

WATER SUPPLY

Montgomery, Ala.—Council has passed an ordinance providing for additional boilers, 250-horsepower, at water works plant.

Bisbee, Ariz.—Citizens have voted \$125,000 bonds for water works extension.

Benson, Ariz.—C. Houston is interested in the construction of water works.

Hermosa Beach, Cal.—The City Trustees are considering constructing municipal water works.

Long Beach, Cal.—An election will be held December 15 to vote on the question of purchasing the water works; if purchased, the plant will be improved.—L. A. Paine, Deputy City Clerk.

Sacramento, Cal.—The Board of Health is urging the establishment of a filtration plant and the employment of a competent Engineer.

San Diego, Cal.—The City Engineer has prepared plans for enlargement and extension of the water system.—J. T. Butler, City Clerk.

Manitou, Col.—City will reconstruct the mains on upper Canon avenue.

Hartford, Conn.—The Water Commission-

ers are discussing the proposed reservoirs in Nepaug, whereby an ample supply of water is assured the city.

Waterbury, Conn.—The Board of Aldermen has ordered City Engineer R. A. Cairns to look over the sites for a new reservoir suggested by Alderman John F. Hayes, and in addition started a party of surveyors taking levels in Prospect Valley; another party will be put into the valley to collect data at once, so that in all probability the City Engineer will be ready to render his report at the next meeting of the Aldermanic Board.

Palmetto, Fla.—Bonds, \$10,000, have been sold for the construction of water works; bids for construction will be called for about January 1.—E. F. Wilson, Mayor.

Adairsville, Ga.—Council has decided to lay about 3,000 feet of 6-inch c.-i. water pipe.

Decatur, Ga.—Hillman & Co., of Atlanta, have purchased \$30,000 Decatur water works bonds at a premium of \$900.

Chicago, Ill.—Chicago Board of Underwriters has appointed committee to confer with the city on a proposed ordinance requiring standard standpipes and fire pumps in all buildings of 100 feet high that can be used by the Fire Department.

East Moline, Ill.—The Union Malleable shops will install a water works system and plans to tap the 12-inch main now being laid on Thirteenth street.

Pekin, Ill.—Council has received petitions for fire hydrants on South Fifth street and at the corner of Fourteenth and Henrietta streets.

Yorkville, Ill.—City will spend \$7,000 for a new reservoir and pump to increase water pressure.

Indianapolis, Ind.—The Board of Public Works and City Council are considering the letting of a contract for installation of high-pressure system in the business district.—Blaine H. Miller, City Engineer.

Mishawaka, Ind.—The Rubber Regenerating Company has sunk three 2-inch wells and secured flowing water; Board of Water Works will investigate supply and see what can be done towards getting a supply for the city.

La Porte City, Ia.—The electric light and water plant was damaged by fire \$3,000.

Muscataine, Ia.—Council will extend water mains to several outlying districts.

Thornton, Ia.—A movement is on foot looking to the construction of water works.

Hay City, Kan.—Robert B. Orr Engineering Company, Kansas City, Mo., has prepared plans for water works improvement.—Henry Schwaller, Mayor; F. R. Dussard, Chairman.

Wichita, Kan.—Citizens have authorized an issue of \$860,000 bonds for municipal water plant.

Seebree, Ky.—Council has directed estimates to be prepared for a \$13,000 water system.

Newport, Me.—City is discussing municipal ownership of water works.

Baltimore, Md.—Mayor Mahool has announced that he is looking over the field with the idea of engaging two of the best hydraulic engineers in the country to come to Baltimore and make a thorough inspection of the country around the Gunpowder River with the view of securing an additional water supply for the city, made possible by the ratification of the \$5,000,000 water loan last week; within one week, perhaps, the Mayor will be able to announce the names of the men selected.

Baltimore, Md.—Work on the new water supply system on Gunpowder River will start about July 1, 1909; a reservoir, 21,000,000-gallon capacity, will be erected.—Water Engineer Quick.

Chicopee, Mass.—City proposes to extend the main to Fairview.—J. O. Beauchamp, Mayor.

Medway, Mass.—City may install a water works system.

Springfield, Mass.—The plans and specifications of the Springfield Water Commission for the reservoir and dam on Borden brook have been approved by the State Board of Health, and commission is calling for bids for the contract; that part of the State Board's reply to the application for approval which gives a description of the work to be performed is as follows: "The dam is to be located in a narrow valley about 600 feet below the junction of Alder Brook with Borden Brook, at the lower end of an extensive area of quite level and mostly cleared land surrounded by hills with steep slopes. The estimated area of the reservoir is 215 acres at high water mark, the total storage capacity 2,478,000,000 gallons, the maximum depth about 60 feet and the average depth 35.7 feet. It appears that the drainage area has been found by surveys to be 7.95 square miles, which is considerably in excess of that indicated on the State map.

Carsonville, Mich.—Bonds, \$15,000, have been authorized to establish water system.

Grand Rapids, Mich.—The Soldiers' Home

Board is planning to build a new \$4,000 cement block pump house near where the old wooden one now stands.

Ely, Minn.—Another intake pipe will be installed in case of breaks or injury to the present one.

Eveleth, Minn.—Specifications will be issued prior to December 1 for a water tower of 300,000-gallon capacity, 110 feet high, and for 16-inch and smaller water mains; engineer's estimate, \$30,000.—Edward P. Burch, Consulting Engineer, Minneapolis.

Pascagoula, Miss.—City will vote on December 1 on water works bonds.

Carthage, Mo.—William Little, of St. Louis, member of the brokerage firm of Little & Hayes, will submit propositions to the City Council to finance the water works project.

Kansas City, Mo.—Plans have been about completed by W. G. Goodwin, Chief Engineer of the Water Department, which contemplates locating the city's water supply entirely in Missouri; contemplates change will cost at least \$3,000,000.

Marceline, Mo.—An election will be held to vote on the question of issuing \$50,000 water works bonds.

Albion, Neb.—Bids will be received for the construction of an addition to the pumping station.—C. E. McGill, City Clerk.

Haddonfield, N. J.—The Borough Council has decided to reopen bids for the construction of a municipal water plant and also for the sale of the \$100,000 worth of bonds.

Passaic, N. J.—The Committee of Water Supply in report has advised city to enter into contract with Jersey City to supply water and report was carried; city will lay its own pipes and a main from Passaic to Allwood, a mile away, through which hamlet Jersey City's Boonton supply pipe runs; City Surveyor Peterson estimates cost of excavations, pipes, etc., at \$348,955.

Westmont, N. J.—Citizens have voted in favor of a municipal water plant.

Buffalo, N. Y.—Commissioner of Public Works F. G. Ward has been authorized to enter into a contract for valves at a cost of \$20,000, but must secure special authority of Council providing any large-sized valves are desired for the switchboard system.

Canastota, N. Y.—At the next village election in March a proposition will probably be submitted to the taxpayers for an appropriation for the construction of an additional storage reservoir for the Canastota water system.

Elmira, N. Y.—Elmer Borough Council has received petition asking Council to submit to the legal voters at a special election a proposition to issue water works bonds.

Jamestown, N. Y.—The Erie Railroad Company will erect a new 70,000-gallon pumping station to supply water to the locomotives; 12-inch water main will be laid 1,200 feet to the waterway now being built, which connects with the lake.

Shortsville, N. Y.—Plans for the proposed water works system have been approved by the State Water Supply Commission; appropriation, \$30,000.

Hamlet, N. C.—Hamlet Water Works Company will extend water mains, enlarge and improve plant.

Grand Forks, N. D.—An addition will be constructed to a settling basin 18x140 feet.

Hamilton, O.—Bonds, \$22,000, will be sold at private sale for improvement of water supply and building new intake pipe.

Madison, O.—The Riggs & Sherman Company, Toledo, has been selected to plan and superintend the construction of water works; also sewage disposal plant for the Soldiers' and Sailors' Widows' Home.

Mason, O.—City is discussing construction of water works.

La Grande, Ore.—City will build a \$160,000 municipal water works system.

Newport, Ore.—The question of constructing four miles of 8-inch wood main from collecting reservoir, gravity flow, to be pumped 100 feet to main reservoir, capacity 250,000 gallons, and to be distributed by gravity for domestic use and have direct pump connection for fire pressure, is being considered.—M. Wygant, City Engineer.

Newton Falls, O.—Bids will be received November 24, noon, for machinery for water works; specifications at office of Reliance Engineering Company, Cincinnati.—Carl W. Smith, Clerk Board Trustees.

Minso, Okla.—City will want water works machinery about January 1.—J. C. Kinzey, Mayor.

Bethlehem, Pa.—Consulting Engineer Hague, of New York, who prepared the estimate of the cost of the plant, is only a preliminary engineer, according to Chairman Roberts of the Water Committee; the committee is not at liberty to hire a permanent engineer on the work until the people pass upon the proposition; Mr. Hague's report calls for an appropriation of \$150,000 to cover the cost of a pumping station, pipe line and standpipe; Council may have to curtail this and the issue of

bonds for \$175,000 will, it is thought, cover all actual needs in the case.

Butler, Pa.—The People's Water Company, capital \$30,000, has begun the construction of a water system at Butler.

Collingswood, Pa.—Borough Council has authorized the water committee to contract for the driving of a test well with the idea of establishing a water plant. The water now supplied contains a large quantity of iron and is ruinous to the porcelain bathroom furnishings. It has a bitter taste.

North Bethlehem, Pa.—The Borough will lay a pipe line and supply North Bethlehem with water.—R. E. Neumeyer, Engineer.

Pittsburg, Pa.—The Board of Public Works has ordered the extension of water mains in several parts of the city.

Williamsport, Pa.—Motion of Mr. Hann that the water company be conferred with in regard to putting a main in Lincoln avenue, for a plug, and that plug also be placed on Southern avenue, Whitford avenue and Mountain avenue has passed.

Bamberg, S. C.—Estimates are being prepared for construction of water works; cost, \$7,000.

Spartanburg, S. C.—Property owners on Converse Heights are urging the installation of a water works.

Bristol, Tenn.—Mayor Dickey states that the city would next year probably be compelled to build a reservoir or install standpipes; he believes it to be important to consider this matter before another dry season, and has requested the Board of Public Works to look into it.

Memphis, Tenn.—An ordinance has been passed by Council authorizing an issue of \$1,000,000 5 per cent. water works bonds.

Ft. Worth, Tex.—The citizens will vote on the question of issuing \$1,500,000 bonds for reservoir system and \$750,000 for artesian supply system.

Corpus Christi, Tex.—City has voted \$37,500 of bonds to purchase the water works plant.—O. O. Wright, City Secretary.

Merkel, Tex.—City has voted bonds for the construction of water works.

Sherman, Tex.—Bids will soon be received for machinery for the new water works system.—Henry Zimmerman, County Secretary.

Sweetwater, Tex.—Citizens are discussing the construction of water works, ice and light plants; A. H. Place has water works plans under way.—Address Judge L. H. Beal.

Swanton, Vt.—City proposes to extend the pipe to Fairfield pond and sink the latter about four feet deeper.

Clifton Forge, Va.—Council is considering construction of water works.

Aberdeen, Wash.—Council has instructed City Attorney Hogan to prepare an ordinance for building reservoir and extensions to the water mains; this will also include a call for a special election to vote \$40,000 bonds.

Mabton, Wash.—Citizens will vote again on issuing water works bonds.

Tacoma, Wash.—The Special Water Committee Chairman, Councilman Brand, the Commissioners of Public Works and the City Engineer, as a special committee, have arranged for the purchase of additional land from John Burnett for increased reservoir capacity near the Alaska street reservoir.

White Bluffs, Wash.—The White Bluffs Irrigation Company, George Todd, Manager, will install a gas producer pumping plant.

Bruce, Wis.—Additional bonds, \$4,800, were voted to complete the water works system.

Madison, Wis.—Plans for the proposed auxiliary pumping station on the city lots of East Dayton street were submitted, accompanied by bids, the lowest of which was \$2,500, submitted by Oakley & Buser; it had been planned to spend only \$1,000, and the Board has asked the architect to revise the plans.—Mayor Schubert.

Wilton, Wis.—Town has ordered estimates to be prepared for a water works system.

Cheyenne, Wyo.—Citizens on November 3 voted to issue \$50,000 bonds for water works improvements.—C. Carlisle, City Engineer; J. D. Wright, City Clerk.

Hawkesbury, Ont., Can.—The Ontario Railway and Municipal Board have granted this city permission to expend \$30,000 for water works and sewers.

Toronto, Ont., Can.—Allan Hazen, of New York, is preparing plans for a filtration plant for Toronto.

Moosejaw, Sask., Can.—The ratepayers have passed by-laws for water and sewer extensions; cost, \$40,000.

LIGHTING AND POWER

Gadsden, Ala.—The Alabama Power Company, incorporated for erecting a plant for the development of electric current for lighting and other purposes from the Coosa River, has filed its plans and specifications with the Secretary of State of Alabama; the company will take immediate

steps for the construction of this plant after its plans have been approved.

Little Rock, Ark.—The Little Rock gas plant, owned by Pulaski Gas Light Company, is planning extensive improvements in reconstructing its works, which were destroyed by fire.

Oakland, Cal.—The central power station for the system of the Southern Pacific Company's lines about the East Bay Shore will be located at the foot of Fruitvale avenue on the east side of the Tidal Canal; site for power plant has been acquired; plans for the buildings and other accessories of the plant are being prepared; entire bay system will be converted into an electric railway and more than \$2,000,000 will be spent in Berkeley alone making improvements.—W. R. Scott, Superintendent.

Petaluma, Cal.—Steps are being taken by the Town Trustees of Petaluma to procure a municipal gas plant; William E. Early, City Attorney, has been instructed to draw up a resolution calling for a special election to bond town for proposed plant to cost \$75,000; another proposition which will be submitted at the same election will be a high-pressure salt-water pumping plant for fire protection, to cost about \$25,000, and \$10,000 municipal rock crushing plant for street improvements.

Oroville, Cal.—H. O. Lague and associates will erect a power plant in Plumas County; locations call for 15,000 inches on Nelson Creek, a like amount on Onion Valley Creek, and 30,000 inches on the middle fork of the Feather River at Bidwell Bar, making a total of 60,000 inches; water from Nelson and Onion Valley Creeks is to be conveyed through Bald Rock Canyon.

Imperial, Cal.—An \$80,000 gas plant will be established at Imperial.—J. T. Boyd and Dr. G. H. Kriechbaum are interested.

Quincy, Cal.—Locations are reported to have been filed covering 60,000 inches of water for an electric power project in Plumas county; H. O. Logue, of Reno, Nev., is interested.

Fairfield, Conn.—Town has received estimate of cost of installing an electric light plant to light the villages of Fairfield and Southport.

Hartford, Conn.—Council has received petitions for two electric lights on Edgewood street; a suitable light on the corner of Nowe avenue and Natalie street; also for an electric light at the corner of Franklin avenue and Victoria road.

Manchester, Conn.—Plans are being made by the Glastonbury Light and Power Company to rebuild and improve its system in Manchester; company has awarded a contract to the J. G. White Company, New York, N. Y., for the construction of a substation.—W. L. Ripley, Local Manager.

Jacksonville, Fla.—Council has received ordinance granting a franchise for an electric light and street railway system to M. M. Smith, W. D. Holden and A. Johnson.

Pablo Beach, Fla.—Pablo Beach Development and Power Company will construct electric light plant.—C. H. Mann, President.

East Point, Ga.—Citizens have voted to issue \$95,000 of bonds for the construction of water works, a sewerage system and an electric light plant.—E. H. Davis, Griffin, Engineer.

Hawkinsville, Ga.—Bonds, \$15,000, have been voted for installing electric light plant.—Address City Clerk.

Ridott, Ill.—Fred Ridott will petition for franchise to establish a lighting plant.

Davenport, Ia.—The Walther-Vogler Gas Machine Company has been incorporated to manufacture a new kind of gas machine and place it upon the market; capital, \$15,000. Incorporators: Jacob Vogler and R. J. Walther.

Tabon, Ia.—The Malvern Light and Power Company, of Malvern, has arranged to furnish this city with electric light.

Ft. Riley, Kan.—Proposals will be received November 25, 10 A.M., for constructing approximately 750 feet electric conduit and installation of cable, etc.—Capt. W. M. Whitman, Construction Quartermaster.

Topeka, Kan.—Bonds, \$40,000 have been voted for electric light plant.

Albany, Ky.—Citizens have formed a stock company and Albany is to have an electric light plant; plant will be installed at once.

Boston, Mass.—The Superintendent of Streets of this city invites parties having street lighting apparatus adapted to systems other than the present system of low pressure gas mantles, to demonstrate, if they so desire during continuance of present lighting contract, with a view to the improvement of this system at the expiration of present contract on September 15, 1909.—G. C. Emerson, Superintendent of Streets.

Boston, Mass.—A hearing has been given by the Gas and Electric Light Commissioners upon the petition of the Stockbridge Lighting Company for authority to increase its capital stock from \$25,000 to \$40,000 to

pay the floating debt of the company due to extension of lines and the cost of street lighting system; Treasurer Charles E. Hull says the company has contracted with Stockbridge to supply the town with 80 30-candlepower incandescent electric lamps of which 45 are to be served by the underground system and 35 by the overhead; the cost will be \$27 and \$15 a year each, respectively; the company has used all its working capital and needs more; further extensions will be necessary next spring which will cost \$2,000 more; there was no opposition.

North Adams, Mass.—A modern electric light power station, to cost \$100,000, is to be built by the North Adams Gas Light Company in the immediate future; new plant will generate 4,000 h.p., as against 2,500 at the present time; new power house will be of reinforced concrete and will be fireproof.

Stockbridge, Mass.—The Stockbridge Lighting Company is seeking authority to issue \$15,000 additional capital stock, making the total stock \$40,000.

Baltimore, Md.—Building Inspector Preston has been allowed \$150,000 for a municipal heating and lighting plant, to be located in the old Central Police Station building, on North street, near Lexington and in No. 4 Engine House, on Lexington street, near North; two buildings are to be connected. It will be one of the best equipped municipal plants in the country, and will furnish the City Hall, the Court House, and the City Hall Annex with heat and electric lighting current.

Doonsboro, Md.—Among the corporate undertakings involving electric lighting of towns and cities is the planned expenditure of \$15,000 by a company to develop about 200 horsepower from a stream to construct six miles of wiring and to transmit light and power to Doonsboro and other cities.

Bay City, Mich.—L. H. McHenry, representing Eastern Michigan Power Company, outgrowth of the Commonwealth Co., which is developing Au Sable river water power for electrical purposes, has made an offer to city for street lighting and will also ask for franchise; engineers are surveying river and site for first dam has been selected; several millions will be expended in development; Saginaw, Au Sable, Osceola, West Branch, Grayling, Gaylord, Standish, Alpena, the Tawoses and other towns will eventually be supplied.

Chelsea, Mich.—The Chelsea Gas Company has been incorporated.—J. B. Cole, Manager.

Alexandria, Minn.—Council will purchase a complete arc lighting system on specifications by Edward P. Burch, Consulting Engineer, Minneapolis, at its meeting on November 19.

St. Paul, Minn.—The Board of Public Works has been ordered to draw up suitable specifications for street lighting for the ensuing year in order that proper arrangements may be made for receiving bids.

New Albany, Miss.—City has issued \$10,000 bonds for purchase of duplicate machinery for light and water plant.—G. S. Mitchell, City Clerk.

Carl Junction, Mo.—Business men are urging a lighting system from lines of Joplin-Pittsburg Electric Railway, which passes through Carl Junction; the company can furnish all power necessary and would wire the city at a reasonable rate.

St. Louis, Mo.—Property owners of the district bounded by Fourth, Twelfth, Washington and Market streets, are discussing a uniform system of lighting for the downtown streets; committee has presented figures on the cost of carrying out the plan in the district named, and data from other cities, which have adopted the electrolier system.

Great Falls, Mont.—John D. Ryan, of the Great Falls Power and Townsite Company, announces that the company will begin the expenditure of \$5,000,000 in building dams and a huge power plant, and that the construction of a power transmission line 165 miles long will soon be begun; this line will run into Butte and provide power for the Butte mines; the company will also build a wire factory at Great Falls and make wire from Butte copper with which it will supply the entire copper wire market from the Missouri River to the Pacific coast; the company will further build a plate glass, carbide and bi-cement factory to be operated in connection with the power company, it is said; the company is now under contract to supply power to the Boston & Montana smelter at Great Falls, and has taken contract for approximately 50,000 horsepower a year; not until the end of next year will the Great Falls company be in a position to generate power for its new customers from the two dams now being built; the capacity will be further increased when three additional dams, now in contemplation, will have been finished.

Ft. Robinson, Neb.—Proposals will be received by Capt. F. T. Arnold, C. Q. M., December 1, 1 p. m., for constructing an electric lighting system, building for transformer sub-station and furnishing electric current for illuminating and small motor purposes.

Plainfield, N. J.—Property owners in the vicinity of Lenox, Cameron avenue, Randolph and Loraine roads, have petitioned for electric lights.

Buffalo, N. Y.—Henry V. Bisgood, Chairman of the Board of Trustees of the City and County Hall, has notified the Board of Aldermen that the Board is ready to submit plans for electric lighting of the building; the installation of a modern electric lighting plant in the hall will cost \$75,000.

Geneva, N. Y.—Council will soon receive estimate from Mr. Sweet, the electrical expert, of the cost of a municipal pole line.

Geneva, N. Y.—Council has received petitions for several electric lights.

Roosevelt, N. Y.—The Roosevelt Water, Power and Light Company has just completed its incorporation of \$40,000 capitalization and has elected for its officers J. Huyler Ellison, of Freeport, President; Frank A. Wood, of Roosevelt, Secretary, and Arthur Whitehouse, of Roosevelt, Treasurer. The Board of Directors and Executive Committee for the ensuing year are the above officers and Elvin N. Edwards, Charles Whitehouse, Edward Uhe and Charles DeLap; company will supply water, power and light to the community of Roosevelt; it expects its plant to be in full operation by the first of June and at least five miles of water mains.

Toledo, O.—Council has ordered the improvement of Elm and Strucker streets by lighting with electric lights.

Antlers, Okla.—Engineer has been employed to estimate cost of an electric light plant which the city contemplates installing.

Minco, Okla.—City will want electric light machinery about January 1.—J. C. Kinzey, Mayor.

Chester, Pa.—Joseph Shortledge, of Concordville, is interested in plan to build an electric railway from Chester to Llewellyn, Concordville and West Chester.

Flemington, Pa.—Borough Council will contract in the near future for the lighting of the streets by electricity.

Harrisburg, Pa.—The Street Lighting Department will require a lot more money next year; street lighting contract will be let; three years ago the bids were \$47 per light; 531 2,000-candlepower arc lights now in city and bids are expected to be up to or over \$70 mark, which means an increase of \$15,000.

Harrisburg, Pa.—Council has ordered arc lights placed at Seventh and Hildrup streets, Reel and Schuylkill and Seneca and Jefferson streets; also received ordinances for lights at Kunkel and James streets, Verebeke and Susquehanna and on Thompson street.

Harrisburg, Pa.—The Harrisburg Light, Heat and Power Company have made plans for a permanent decorative illumination of Market street and Market square.

Philadelphia, Pa.—Select Council has passed ordinances for the placing of over 2,000 gasoline lamp posts in alleyways.

Aberdeen, S. D.—Council has voted to condemn the iron electric light poles.

Bastrop, Tex.—T. A. Orgain, City Secretary, has charge of bond issue for the purchase of an electric light plant.

Fort Worth, Tex.—The Board of Trade will urge that enclosed arc lights 40 feet apart on ornamental poles, be erected on Main street from Texas and Pacific Station to Court House.

Weatherford, Tex.—Bonds, \$25,000, have been voted for water and light plant.

Abingdon, Va.—The United Powers Company will soon be in market for three 250-h.p. turbines, 20-foot head automatic regulators for each turbine; three 170-kw. 6,600-volt generators, with exciter and switchboard instruments, complete; three complete lightning-arrester panels; turbines and electrical apparatus to be installed by contractors furnishing them; two concrete dams; 500 kw. in transformer capacity, in units of 10, 15, 25 and 50 kw.; 200 pole steps; 240 cross-arms; 800 high-tension double or triple petticoat insulators and pins; 20 miles No. 6 B. & S. weatherproof copper, etc.—H. J. Palmer, Engineer, Newport, Va.

Burlington, Vt.—The Burlington Light and Power Company will in the spring develop to its full capacity the water power privileges at Essex Junction at the Hunter & Shiland and the Brownell privileges on the Winooski River; company will build a dam below the present Hunter & Shiland dam of concrete and of the most substantial construction; the height of the new dam will set the water back as far and the iron bridge on the Central Vermont railroad, and this storage basin will hold an immense volume of water, forming an attractive lake; a large power

house will be constructed below the dam on the Essex side of the river, near the site of the present Brownell saw mill.—J. J. Kennedy, Engineer, New York City, is in charge.

Buena Vista, Va.—The Rockbridge Power Company has secured a franchise to furnish the city with electric light and power; company proposes to develop water power on North River and furnish electricity to Buena Vista, Glasgow, Buchanan and possibly Lexington, Va., locating sub-stations in each city.

Norfolk, Va.—Resolution providing for an appropriation of \$1,323.20 for the extension of water mains on Maury place and Manteo street is now in Mayor's hands.

Radford, Va.—The Central Water Power Company, composed of Montgomery County capitalists, has entered into a contract with Council to light the city streets for a term of 15 years; new company proposes to erect a power house at the mouth of Meadow Creek on Little River, a few miles from Radford, and has voted to issue bonds to the amount of \$7,000.

North Yakima, Wash.—The Yakima Valley Power Company, of Spokane, has under construction a 90-mile high-tension line extending from its power plant on the Naches River near Yakima to Pasco, to furnish electric light and power to a chain of cities in the Yakima Valley from North Yakima to Kennewick and to operate the numbers of irrigation plants which have been and will be established in that territory; the company has purchased the power systems in Kennewick and Pasco and will furnish power as soon as the line is completed; the line is designed to convey 10,000 h.p.; from the plant to Pasco is 90 miles and the total length of the line will be 100 miles when various branches to nearby towns are built; sub-stations on the line will be established at Toppenish, Granger, Grandview, Mabton, Wapato, Kennewick and Pasco; to carry the current across the Columbia River between Kennewick and Pasco a 3-strand cable 3,000 feet long, encased in lead, will be sunk to the bottom of the stream; the main line will be of aluminum wires on 50-foot poles; the company will carry its own private telephone line on the same poles; the present capital of the company is \$300,000.—Robert E. Strahorn, President; R. J. Lanson, Vice-president; A. G. Smith, Secretary and Treasurer.

Seattle, Wash.—Council has received a resolution directing the Board of Works to prepare a franchise granting right to erect and maintain gas works with mains for distribution and sale of illuminating and heating gas beyond the limits of city as it existed January 1, 1905; franchise will be sold to bidder offering highest percentage annually of the gross receipts from such system, not less than 2 per cent.

Seattle, Wash.—The Finance Committee has transferred \$150,000 from general to light and power fund; work on extension of electric power pipe line from Cedar Lake to the power plant and the new transmission line between the power plant and the city will be finished; bond issue will be voted on in December to repay this loan.

Tacoma, Wash.—Council has concurred in the communication of the Commissioner of Public Works asking that he be allowed to enter into a contract with some power company for additional horsepower to operate the pumps at Station C in South Tacoma; Commissioner McGregor has been authorized to advertise for bids for power enough to run the pumps; his request for permission to build a power transmission line to bring in this power at a reduced price per horsepower has been granted.

Tacoma, Wash.—A power plant, cost, \$2,000,000 is being planned by city; 20,000 horsepower; initial expense will be met by a bond issue of \$300,000.

New Cumberland, W. Va.—The Panhandle Electric Company has been incorporated; capital, \$50,000; Joseph Bryan, S. N. Dunbar and J. L. Merrill, of Pittsburg; R. S. Rudolph, of Suter Station, Pa., and A. S. Cooper, of New Cumberland, Incorporated.

Madison, Wis.—A scheme to inaugurate a municipal lighting system in Madison, so far as city buildings and street lights are concerned, is seen in a resolution introduced in Council; it provides for the lighting of the library, new high school, City Hall and the central and State street fire stations by the city; a new generating outfit to be installed in the water works.

Platteville, Wis.—O. M. Fox and M. F. Fox are considering extending electric light and power lines to Platteville, having already decided to build from Galena to Benton and Cuba City; company which they head is erecting an electric power plant at Galena to furnish light and power to the vicinity.

Larder Lake, Ont., Can.—A syndicate has been granted the privilege of developing the large water power at Raven Lake, which is about three miles south of Larder Lake; surveys and plans are being prepared.—J. S. Handley, Consulting Engineer.

FIRE EQUIPMENT

West End (P. O. Birmingham), Ala.—City has voted \$10,000 bonds for erection of building for Fire Department and City Hall.

Fort Smith, Ark.—Clerk of Council will advertise for bids and purchase an American, LaFrance or Seagrave aerial truck with a 65-foot extension ladder; Fire Committee is considering site for proposed new fire house.—D. B. Sparks, City Clerk.

Pomona, Cal.—City Clerk Trotter has advertised for bids on an automobile truck with 50-horsepower engine, 120-inch wheelbase, 36-inch wheels and capable of carrying a weight of 3,000 pounds at a speed of 35 miles an hour; bids must be submitted at once; it is to be a combination chemical engine and hose automobile.

Hartford, Conn.—President Charles E. Parker of the Fire Board has reported that the new plans for engine house No. 15 will be ready to submit to the Board of Contract and Supply this week and new bids will be advertised; bids on the first set of plans were rejected last week because they were too high, and the new plans are to be somewhat simpler so as to bring the cost of the house within the estimate of \$15,500.

Kensington, Conn.—City is considering the securing of equipment for fire protection.

Meriden, Conn.—The erection of a fire station is under consideration; cost, \$15,000.

Washington, D. C.—City will ask estimates on an engine house at Penn avenue and Seventeenth street.—W. T. Belt, Fire Chief.

Pensacola, Fla.—City will erect a new truck house at northeast corner of Interdencia and De Villiers streets.

Paris, Ill.—Town will procure chemical engine and hose wagon.

Gary, Ind.—Architects J. E. Hammons & Son have been retained to prepare plans for a City Hall, fire and police station; cost, \$45,000.

Milford, Ind.—Residents in the southwest section propose to organize a hose company.

Frontenac, Kan.—Town is in need of more fire hose.

Henderson, Ky.—A new fire station will be erected at Mill and Helm streets.

Lowell, Mass.—The sum of \$6,200 was voted for a hose wagon and truck for the new Centralville fire station and a hose wagon for the High street engine house.

Ludlow, Mass.—Citizens of Little Canada District are considering purchase of a chemical which could be used to advantage by the firemen in fighting whatever fires break out in that section of the town; petition will be sent to Selectmen asking that chemical be procured; L. Demars, North street, is interested.

Detroit, Mich.—St. Claire Heights is planning to add several fire hydrants, and later form and equip a Fire Department.

Eveleth, Minn.—The City Clerk will advertise for bids on 1,500 feet of fire hose to stand 400 pounds pressure.

Graceville, Minn.—The Fire Chief recommends the purchase of hose.—Address Village Clerk.

St. Louis, Mo.—Council will build additional engine house.—Chas. E. Swingley, Chief, Fire Department.

St. Louis, Mo.—The Board of Public Improvements will have plans prepared for two two-story engine houses; total, \$40,000.—A. J. O'Reilly, President.

Highbridge, N. J.—Liberty Hose Company is raising funds to purchase a new hook and ladder truck.

Lakeview, N. J.—Lakeview Fire Department is collecting funds for the erection of an engine house and purchase of a hose reel and plenty of hose.—Geo. Bromley, Chief.

Syracuse, N. Y.—The Board of Contract and Supply has authorized Clerk Fred R. Pierson to advertise for bids for a quantity of stop valves for the Bureau of Water and 2,500 feet of fire hose.

Troy, N. Y.—Council has passed an ordinance for \$3,500 improvements at Read steamer house; also for purchase of a 2,500-pound fire alarm bell.

Middletown, O.—Fire Chief Ewing has asked the Board of Public Safety to furnish the Fire Department with a \$1,700 auto; Chief Ewing wants a machine large enough to carry several persons.

Piqua, O.—Bids for the new fire station were opened recently, but no contract has been let, as more money is needed, and nothing can be done until the next session of Council.

Enid, Okla.—Citizens are urging better fire fighting facilities.

Miami, Okla.—City is arranging to purchase new apparatus and hose for its department.

Guthrie, Okla.—The Fire Committee is securing data from Webb Company regarding automobile combination fire engine and hose wagon, to be purchased at a cost of \$6,000.

Camp Hill, Pa.—Town is receiving bids from local contractors for erection of a \$4,000 fire house.—C. W. Heyd.

Cresson, Pa.—Town may purchase an engine similar to those used in Cambria county.

Harrisburg, Pa.—Common Council has received ordinance for a \$2,000 chemical wagon for the Paxton Fire Company.

Hazleton, Pa.—Select Council has received an ordinance directing the City Clerk to advertise for bids for the purchase of a combination chemical and hose wagon; referred to the Fire Committee.

South Bethlehem, Pa.—Borough Council will erect house for Good Will Fire Company; also considering reconstruction of fire alarm system.

Thornton, R. I.—Citizens of the Cranston side of that village propose to secure better fire protection.

Charleston, S. C.—The Kanawha Chemical Engine Company has called upon the city for the return of the chemical wagon loaned to the Fire Department; the company has been informed that it was almost impossible to do without the chemical wagon; however, city did not have the \$1,250 necessary to put up for the wagon and it is probable that a combination chemical and hose wagon will be rented by the Council until a levy can be had for its purchase.

Knoxville, Tenn.—Council will build fire hall in the Ninth Ward; estimated cost, \$60,000.

Alice, Tex.—Funds are being secured for a chemical engine and other equipment.

Blum, Tex.—A volunteer Fire Department has been organized with Oscar Pogue as Chief; equipment will be purchased.

Dallas, Tex.—City Secretary has invited bids for furnishing 30 miles of insulated iron wire to be used in installing Game-well fire alarm system.

Dallas, Tex.—The Colonial Hill Improvement Association has adopted a motion that the Chairman of the Fire Protection Committee be instructed to urge upon the Fire Commissioner and City Commission to lot to be utilized for new fire station.

Fort Worth, Tex.—Delegates to the Platform convention will urge the erection of a fire house between Seventeenth and Ninth streets.

Seattle, Wash.—Council has ordered the erection of a temporary building at Raines avenue and Orcas street for a hose cart and hose.

Oshkosh, Wis.—Manufacturers suggest the purchase of hose to make a total amount of from 12,500 to 15,000 feet; three good steamers in constant condition for immediate use; tests of Oshkosh Water Works Company, as provided by the charter and franchise; inspection of hydrants every three months, with complete record kept of same, and appointment of a committee to investigate the feasibility of purchasing a fire tug.—Address Mayor Banderob.

Racine, Wis.—Mayor Horlick has recommended an automobile for the Fire Marshal at a cost not to exceed \$1,000, and promised that if such was purchased he would personally see that the Chief of Police was provided with a like conveyance.

ELECTRIC RAILWAYS

Lonoke, Ark.—The Meto Valley Railway Company has been chartered to build a line from McCreanor southward in Lonoke county for 16 miles to develop timber land; capital, \$32,000; incorporators: E. C. Murray, S. M. Savage, C. P. Harnwell, E. S. Jett and R. J. Strong.

Modesto, Cal.—The surveying corps of the Stockton-Modesto trolley line reached Modesto, having completed the survey between the two cities; applications for franchises in both Modesto and Stockton will be made soon, and construction work will begin within a month; right-of-way has been obtained for the entire distance between the two cities and the promoters expect to have the road finished by next July; later extension to Turlock and other points down the valley will be made.

Stockton, Cal.—The Stockton Terminal and Eastern Railroad Company has been incorporated in California to build a railway from Stockton to Jenny Lind; capital stock, \$600,000, of which \$30,000 has been subscribed. Directors: A. Shane, Indianapolis; W. H. Newell, Stockton; A. A. Grant, Sonora; N. W. Condon, Berkeley; E. F. Davis, S. L. Steidley, Oakland; J. E. Adams and Robert F. Burns, Berkeley.

Stockton, Cal.—Morris L. Brackett, Vice-president of the San Joaquin Valley Electric Railway Company, Stockton, has announced that the company's engineering corps is now in the field making the final surveys for the route for this projected railway system; the entire right-of-way has been secured; as soon as the surveys have been made construction work will be started; road as projected will be standard-gauge line and will extend from Stockton through French Camp, Manteca, Moreno,

Summer Home, Ripon, Salida and Wood's Colony to Modesto; distance, 35 miles; company proposes to operate gasoline motor cars; repair shops will be built at Stockton; capital stock, \$1,000,000, of which \$35,000 has been subscribed; bonds have been authorized to the amount of \$500,000. Officers: H. C. Holmes, New York, President; Morris L. Brackett, Vice-president; Charles E. Dickey, San Francisco, Cal., Secretary; H. E. Teter, Stockton, Treasurer.

Sandpoint, Ida.—A proposed street railway will connect Sandpoint and Kootenai; franchise has been asked from the city by F. J. McBride, Al Filson, J. B. Southmayd, V. M. Smith and F. M. Molyneux.

Jacksonville, Ill.—Within a few weeks' time actual work of extending the Alton, Jacksonville and Peoria Railroad on from Godfrey to Jerseyville and from Jerseyville to Jacksonville will have been started, as the \$2,000,000 backing the line has received from a French syndicate, on a bond issue of this amount, will be forthcoming in that time; big bond issue will build 60 miles of railroad complete and furnish the necessary paraphernalia to equip it, thus completing the line through to Jacksonville and equipping it with power houses, cars, etc.; through electric express line from Alton to Jacksonville, through one of the richest pieces of territory in the United States will be operated.

Kansas City, Kan.—The Kansas City and Olathe Electric Railway Company, Kansas City, Mo., has been granted a franchise by the Wyandotte County Commissioners to extend its line north from the present terminus in Rosedale to Kansas City, Kan.; company is hereby given the right-of-way for an electric railway along the south side of the range of hills dividing Turkey Creek Valley from the Kaw Valley, adjacent to the St. Louis and San Francisco Railroad right-of-way; it provides also for the right to construct a tunnel through the hills to a point near the Fifth street bridge.—F. P. Dickson, Kansas City, Mo., President and Purchasing Agent.

Boston, Mass.—The Boston and Eastern Interurban Railway has filed certificate of exigency with the Railroad Commissioners; capital stock, \$250,000; total estimated cost of equipment, \$8,754,960.

Ironwood, Mich.—The Twin City General Electric Company is planning to extend its system to Bessemer, a distance of five miles.—E. D. Nelson, General Manager.

Columbia, Mo.—O. W. Sprate, St. Louis, Mo., and V. M. Dissaffrey, Buffalo, N. Y., are backing a project to connect Columbia and Mexico with an electric railway; length would be about 30 miles.

Bolivia, Mo.—The Niangua and Western Railway Company has been incorporated in Missouri to construct an electric railway from Lebanon through Long Lane, Buffalo and Halfway to Bolivia; length, 60 miles; company owns the entire right-of-way, and the roadbed is now ready for the laying of rails, except a small part where some grading will have to be done; route of the proposed line is that of the old Laclede and Fort Scott Railroad, which was organized years ago for the purpose of constructing a steam railroad from Lebanon to Fort Scott, Kan.; capital stock, \$600,000. Incorporators: George Lovan, James Lovan, S. L. O. Lovan, A. B. Lovan and J. N. Smith, all of Springfield, Mo.

St. Louis, Mo.—The King Electric Company and the Suburban Electric Light and Power Company have been granted an extension of their franchises, jointly covering St. Louis County; \$150,000 and \$300,000 would be expended in constructing lines and other improvements.

Billings, Mont.—Work on the electric railway between this city and Laurel will commence within a very short time; a large amount of material has been ordered, certain details are being worked out; all the preliminary surveys have been run and Engineer Lillis has completed his estimate and submitted his report to the stockholders. Steps are being taken to apply for a franchise at Laurel for a terminal site and for certain street rights. The line is to be thoroughly equipped, and the estimated cost of the interurban section, depots, etc., will be in the neighborhood of \$250,000. The company is incorporated for \$2,000,000, and the promoters declare that the construction of the line to Laurel is but the beginning of what will eventually be a complete road to Cooke City and the Yellowstone National Park. N. S. Poole and M. E. Estep, moving spirits in the enterprise, declare that the completion of the line to Laurel is a question of but a very few months' time.

Goldfield, Nev.—The County Commissioners have granted a franchise for an electric railroad to George Winfield, Thomas F. Manning and L. T. Merwin, through certain streets of Goldfield and Columbia, and across the public domain to Diamondfield, three miles north of Goldfield; work is to be started at once and

the first mile of the road must be finished by June 30, 1909; company will carry both passengers and freight and will replace teams in hauling ore from the mines which are not on the various lines of railway that enter the district.

Keene, N. H.—The Keene Electric Railway Company is planning to extend its system to Washington and High streets; plans are under consideration for the construction of an extension to West Swansey.—Frank H. Whitcomb, Secretary.

Manchester, N. H.—The State Railroad Commissioners have granted a petition from the Manchester Traction, Light and Power Company for permission to increase its capital stock \$400,000, another by the Manchester and Nashua street railway to increase its stock \$40,000 and one by the Manchester and Derry Street Railway to make an increase of \$50,000 in its capital stock. Manchester Traction, Light and Power Company with this \$400,000 will take over the stock of the Manchester and Nashua and the Manchester and Derry street railways, and also \$275,000 of the stock of the Manchester Street Railway previously authorized but not issued, which will leave a balance of \$85,000, which will be used for improvements and the extension of its plant.

New York, N. Y.—The Board of Estimate and Apportionment has granted franchise to the New York and Queens Railroad Company to construct extensions of its lines to Whitestone and Bayside.

Oneida, N. Y.—An electric railway will be constructed from the city of Rome to the State Custodial Asylum, distance two miles; company is to be organized as soon as \$25,000 capital stock is raised; is planned eventually to extend the projected line to Oneida Castle and there connect with the West Shore Railroad; distance 13 miles.—D. C. Haddock, Oneida.

Wilmington, O.—The Cincinnati, Wilmington and Xenia Traction Company has presented to Council a franchise to operate its lines through the streets of Wilmington; entire length of the road as proposed will be 38 miles, and it will connect Blanchester, Martinsville, Wilmington, Port Williams and Xenia.

Youngstown, O.—City Council has granted a franchise to the traction company for the extension of the Elm street line from its present terminal at Wick avenue extension and the Hubbard road to the city limits; this will carry the line 1,700 feet closer to the plant of the General Fireproofing Company; line cannot be extended the other 1,100 feet because of the refusal of the Wick estate to give its consent to the extension; work must be done in 60 days.

Chickasha, Okla.—Scott Jones has financed his plan to build eight miles of street railway and construction will begin soon.

Erie, Pa.—The Conneaut and Erie Traction Company will make extensive improvements to its line; \$20,000 worth of bonds will be issued to make necessary repairs and improvements to the roadbed and tracks.—R. W. Palmer, Superintendent.

Susquehanna, Pa.—A new interurban line is projected between Factoryville and Susquehanna.

Chattanooga, Tenn.—Council has received another petition from the Chattanooga Railways Company for a franchise to operate and construct tracks on Georgia avenue, Seventh and Market streets.

Marshall, Tex.—The citizens of Marshall have been offered a proposition by the Sabine Valley Railroad Company to join them in building a railroad south from this city, and to raise a bonus of \$30,000; in consideration the railroad agrees to locate and maintain at Marshall for a period of thirty years its general offices and shops; the railway will use on its way south from Marshall a completed grade of about twelve miles; grade is in excellent condition and practically ready for the rails; company has a force of men at work for some time clearing the right-of-way preparatory to track laying, and it is almost an assured fact that this road will be built at an early date, as the Chicago bankers are ready to take \$110,000 of the bonds at par whenever they are ready to be disposed of.

Waxahochie, Tex.—A. P. Harrington, of Indianapolis, has appeared before Council in the interest of capitalists who are planning to construct an interurban railway from Fort Worth via Waxahochie and Cleburne; also one from Waxahochie to Waco; a franchise was asked over several streets. J. W. Martin, Civil Engineer, also appeared on behalf of a home company who wish to take over present car system and have franchise extended; motor cars would be used in place of mule cars.

Cleburne, Tex.—Colonel J. Mercer Carter, of Dallas, promoter of an interurban line between Cleburne and Glen Rose; also Messrs. Morton and Farr, of the Somervell

county seat, are urging the leading business men to consider the proposed electric line to connect the two cities.

Husum, Wash.—An electric line will be built to White Salmon and Bingen, a distance of ten miles.

Seattle, Wash.—The Seattle and Issaquah Electric Railway Company has been chartered to build and operate electric railways between points in King and Snohomish Counties; capital, \$2,000,000.—Edwin S. Gill and John McQuade, Incorporators.

Seattle, Wash.—The Seattle Electric Company contemplates the construction of a car line down the Rainier Valley to compete with the Seattle, Renton and Southern Railway for the transportation business of that section of the city; required franchise will be asked; route in building the proposed new line has not been announced; it may extend the Mount Baker line southward between the old Renton line and Lake Washington or it may build a branch from Jackson street down the valley to the west of the present tracks; another plan which the company has considered is the extension of the Beacon Hill line along the Cedar River pipe line to the vicinity of Rainier Beach; with the completion of the Jackson and Dearborn street regrades the problem of building the competing line or lines will be considerably simplified; President, Jacob Furth.

Spokane, Wash.—The Spokane and Inland Empire Railroad Company has no intention of giving up its franchise to build a tunnel in the business district of Spokane, Wash.; construction may begin next February; company has three years in which to have one track in operation; the tunnel will be in Front avenue and will cost \$1,000,000.—J. P. Graves, President.

Spokane, Wash.—Albert M. Dewey, President of the Okanogan Electric Railway Company, Spokane, states that the sale of bonds is practically accomplished, and that work will begin soon; the line and equipment will cost \$2,621,280; the company has a 50-year franchise, right-of-way and charter for a steam or electric railway of 80 miles from Nighthawk, where it will connect with the Victoria, Vancouver and Eastern extension of the Great Northern Railway to the head of navigation on the Columbia River, where connection will be made with river boats and the main line of the Great Northern Railway, giving it outlets to Spokane on the east and Puget Sound points on the west; the main line will pass through Loomis, Okanogan, Ophir, Malott, Brewster and the Q. S. mines, near which a smelter will be built, and there will be branches to Conconully, Omak, Riverside and other desirable points. Horace B. Skinner has been appointed Superintendent of Construction. The other officers of the company are: George D. Needy, of Spokane, Secretary, and M. L. Bevis, Treasurer. The Knickerbocker Trust Company of New York is trustee for the organization. Company was incorporated under the laws of Washington with \$3,000,000 capital stock and authorized bond issue of \$4,000,000. The company owns water rights which will develop not less than 30,000 h.p.; part of this will be utilized by the railway, the rest being sold for light and power to mines and manufactories and lighting towns on its line. The present population of Okanogan county is about 15,000, showing an increase of 176 per cent. from 1900 to 1905. Five new towns will be built on the line and four of these should have 5,000 or more population within five years, while the other is bound to be near the 50,000 mark.

North Fork, W. Va.—Capital has been secured for building an electric road from North Fork to Elkhorn; distance, 4 miles; work is to commence as soon as a franchise is secured.

La Crosse, Wis.—The Sparta-Melrose Electric Railroad Company expects to begin operations in 1909 on the construction of a line between those two cities via Cataract, Angelo and Trout Falls; distance, 28 miles.

Calgary, Alta., Can.—The Montreal Engineering Company has made offer to Council respecting the construction of a street railway.

Lima, Peru, South America.—The Peruvian Corporation has decided to electrify the Central Railroad of Peru, which connects Callao with Oroya in the mountains; address Secretary.

BRIDGES

Montgomery, Ala.—The County Board of Revenue has authorized the construction of a reinforced concrete bridge over Catoma Creek; bridge will stretch for 1,300 feet across this creek, and will be sustained by a series of 20-foot spans; reinforced by steel, there will not be a splinter of wood in the whole structure; cost, \$10,000 to \$12,000; Mr. Estes will have charge of the work under the supervision of County Engineer Pullen.

Vallejo, Cal.—Chamber of Commerce, San

Francisco, is urging the building of a State bridge across the Carquiny Straits from South Vallejo to Vallejo Junction; bridge would be suspension affair from bluff to bluff.

Seaford, Del.—Town Council is endeavoring to induce the Pennsylvania Railroad to erect a steel bridge across the deep cut which divides Seaford from Nanticoke.

Palatka, Fla.—Putnam County, on November 3, voted for the issue of bonds for \$190,000 for the following purposes: \$55,000 for bridges; \$100,000 for hard roads, and \$35,000 for a Court House.—R. Raymond Price, County Engineer.

Princeton, Ind.—Plans for new steel bridges to be built in this county have been adopted by the Board of County Commissioners and contracts will be awarded at the December session of the Board; about thirty new bridges are to be built and four or five old ones to be repaired.—Address Gibson County Auditor.

Aurora, Ill.—Council has received resolution instructing City Engineer to advertise bids for a new cement bridge on Farnham avenue, near Dearborn street.—E. J. Raymond, City Clerk.

Chicago, Ill.—Proposals will be received November 19, 11 a. m., for the removal of about 30 feet of old dock and the construction of about 96 feet new dock on east side of north branch, Chicago River, on Ogden canal at foot of North Branch street.—John J. Hanberg, Commissioner of Public Works.

Cambridge, Ill.—State Engineer A. M. Johnson, Springfield, will prepare estimates of cost for two bridges over Rock River, at Cambridge, for Henry and Rock Island counties.

Pekin, Ill.—Council has ordered Street and Alley Committee to advertise bids for a 200-foot fill in the Long Slough bridge; 2,000 yards dirt necessary.

Des Moines, Ia.—The City Solicitor has completed the viaduct contract and it will be signed; it provides for erection of a viaduct on Seventh street in accordance with plans which were made and approved seven years ago.

Marshalltown, Ia.—A 30-foot wooden bridge on the Marietta road, Marshall County, has been destroyed by fire.—Address Marshall County Auditor.

Leavenworth, Kan.—The County Commissioners have under consideration the construction of three bridges.

Lawrence, Mass.—Plans have been made by George F. Swain for a bridge over the Merrimac River in Lawrence, and the Railroad Commissioners will give a public hearing November 24 on their acceptance; City of Lawrence has been authorized by the Legislature to construct a bridge between Broadway and Union street and for that purpose has bought the old Boston and Lowell bridge which was abandoned by the railroad when the Boston and Maine secured possession of the road; it is now a railroad bridge, but the city of Lawrence proposes the construction of a general passenger and traffic bridge, to enter North Lawrence at grade.

Albion, Mich.—Bonds, \$30,000, have been sold for repairing Erie street bridge over Kalamazoo River; also reconstructing the Erie street, Haven and Superior street bridges.

Detroit, Mich.—The citizens voted in favor of bonding the city for \$1,200,000 for a bridge to connect Detroit with Belle Isle Park; Robert H. McCormick, City Engineer, 107 City Hall, will prepare the plans.

Lansing, Mich.—City Engineer will prepare plans for a 40-foot steel and cement bridge at Cedar street.

Duluth, Minn.—City Engineer McGilvray has reported to Council that the Garfield avenue viaduct is in dangerous condition; \$7,000 needed for repairs; Council also received a petition for a concrete or steel bridge over Oregon Creek at Twenty-third street.

St. Paul, Minn.—The St. Paul Bridge and Terminal Railway Company, incorporated with a capital of \$500,000, will construct a bridge at Deacon's Bluff over the Mississippi River; W. Magivny, President Stock Yards Terminal Railway Company, St. Paul, is interested.

Columbus, Neb.—A new steel bridge will be built over the Platte River at a cost of \$75,000.

Poughkeepsie, N. Y.—The Board of Public Works has accepted the revised plans of the Pine street bridge and grades on either property at the crossing of that street.

Wilmington, N. C.—Bids will be received November 23 for the purchase of \$50,000 4½ per cent. 30-year New Hanover County bridge bonds.—D. M. Eachern, Chairman.

Ridgefield Park (Hackensack Post-office), N. J.—The Board of Chosen Freeholders has voted \$158,000 bonds to build a bridge across the Hackensack River at Ridgefield Park.

Cleveland, O.—Work will be begun early

in the spring on the construction of the Harvard-Denison bridge, for which the electors of Cleveland have authorized a \$450,000 bond issue; plans have already been drawn and advertisements for bids will be made this week; the bridge is to have a span of 2,710 feet and a height above the river of 80 feet; it will connect Harvard avenue S. E. and Denison avenue S. W., two of the chief thoroughfares of the South Side of the city; it will be built to provide for foot, wagon and street car traffic. With construction of the big bridge will come many other improvements affecting the South Side and the South End; most important of these is the contemplated extension of the Denison avenue street car line from its present terminus at Harvard avenue; line will be extended so that it will connect with the East 105th street line.

Norwalk, O.—Bids were opened but no award made for \$6,000 bridge bonds; Security Savings and Trust Company was lowest bidder, \$6,229.50.

Coyle, Okla.—A steel bridge 620 feet long is to be erected immediately across the Cimarron River at this place at a cost of \$13,000, connecting Payne and Logan counties; cost shared equally.—E. J. Oberholzer, Chairman of the Logan County Board of Commissioners; Chairman Sanford Wayne, of Payne County.

Muskogee, Okla.—Bids will be received for the erection of ten bridges, November 20.—T. B. Sutton, Chairman, County Commissioners.

Pittsburg, Pa.—Common Council has received ordinance for the construction of a bridge across the Allegheny River from Eleventh street to East Ohio street, at East street, Northside; this would appropriate \$1,800,000 by bond issue to pay for the structure.

Pittsburg, Pa.—The County Comptroller of Allegheny county and the County Commissioners of Washington county will receive bids November 25 for erection of a joint county bridge over the Monongahela River at Monongahela, Pa.; work needed: Superstructure—three trusses, 455 feet long each, with a 24-foot roadway on which are two street car tracks, one 6-foot sidewalk and all wood work of treated kreodone construction. Substructure—two river piers of stone on pile and concrete foundations and two concrete abutments with wings and reinforced with steel; approaches are to be filled and paved.—J. G. Chalfant, County Engineer, Pittsburg, Pa., or Wm. Wylie, Civil Engineer, Washington, Pa.

Wilkes-Barre, Pa.—The Grand Jury recommends the construction of 27 bridges in Luzerne county; Black Creek township, \$1,800 iron bridge across the Roberts stream; \$600 stone arch bridge across Wolf stream; \$500 stone arch bridge across the Ringlaven stream; Butler township, \$800 cement or stone bridge across Backert's Creek; Sugarloaf township, \$300 concrete or stone culvert over Spaulding's Creek.—Address County Auditor.

Barrington, R. I.—The Town Council is considering the construction of a rip rap wall and repairs to the Barrington River bridge; estimated cost, \$14,000.

Abbeville, S. C.—G. N. Nickels, County Supervisor, wants bids on six new steel bridges.

Bellows Falls, Vt.—The citizens have voted to construct a cement bridge over the canal, replacing the present iron structure; estimated cost, \$12,000.

Bowling Green, Va.—The Carolina County Commissioners have approved plans submitted by Roanoke Bridge Company, Roanoke, for steel bridge across North Anna River to connect Caroline and Hanover counties.

Tacoma, Wash.—Council has received and placed on file the communication of Jill & Jordan, engineers, offering their services in the construction of steel or concrete bridges.

Great Bay, Wis.—The Walnut street bridge ordinance has been approved by the Ordinance Committee of the Council and placed on file for action by the Aldermen; bids were called for in a resolution by Alderman Gross on a Strauss Bascule bridge.

Green, Bay, Wis.—Council will receive bids for a Strauss Bascule bridge.

Marinette, Wis.—City Engineer Hillis is preparing detailed plans for a new approach to the lower drawbridge to take the place of the present worn structure; plans provide for a steel-supported incline; two sections of steel stringers and supports will be run from the end of the last span of bridge and the remainder of the approach will be completed by filling.

MISCELLANEOUS

Montgomery, Ala.—Bonds, \$250,000, will be voted on December 14; they include extension water works system, sanitary sewer system, city wharf and city hospital.

Longbeach, Cal.—City Engineer E. P. Deway has prepared plans for a reinforced concrete bulkhead on the ocean front, along West Beach boulevard; estimated cost, \$100,000.

Oakland, Cal.—Council has received a petition asking that the Board of Public Works be authorized to contract for the necessary dredging at Grove street wharf to make the same available.

San Diego, Cal.—The State Board of Harbor Commissioners of San Diego has made its report to Governor Gillett at Sacramento and advocates the building of a State wharf at San Diego.

San Francisco, Cal.—The Park Commission opened and rejected bids on the work of erecting a grand stand in the stadium at Golden Gate Park; lowest bid was by Healy & Tibbetts, \$4,542 for 100 feet of reinforced concrete construction, and at the suggestion of Metsun the matter was left in the hands of Superintendent McLaren, who was instructed to proceed with the work with the labor in his employ; Superintendent believed 200 feet could be built at a cost of \$7,800.

San Francisco, Cal.—The Secretary of the Navy has given out the report of the Board of Engineers on the Mare Island Straits and its approaches, with recommendations for dredging the straits and extending the dikes; while the Secretary is averse to stating what he recommends, it is understood that in his annual estimates he includes an item for carrying into effect the recommendations made, which will involve an initial expenditure of \$1,767,000 and an annual charge for maintenance of \$125,000.

San Jose, Cal.—The Board of Health is discussing the question of garbage disposal; a garbage crematory to cost \$10,000 is proposed.

South Pasadena, Cal.—C. B. Boothe, Chairman of the Committee of Fifteen which was appointed several years ago to devise plans for the disposal of the sewage of the city, will report his investigations of the garbage disposal plants of some of the cities he visited while on his trip through the East.

Washington, D. C.—An American consul in the West Indies has reported that an inquiry has been received at his office from the local authorities, stating that they desire to receive catalogues, etc., with full information in regard to steam road rollers. Address No. 2773, Bureau of Manufactures.

Palatka, Fla.—Citizens have voted \$190,000 bonds for Court House, hard roads and bridge.—R. R. Price, County Engineer.

Des Moines, Ia.—Citizens have voted to erect the proposed City Hall, at a cost of \$350,000.

Chicago, Ill.—City Architect W. G. Kreig has made plans for a bath-house for the Board of Public Works; cost, \$20,000.

Chicago, Ill.—City Architect W. G. Kreig has made plans for a cell house for the House of Correction; cost, \$200,000.

Indianapolis, Ind.—The plans of Architects Rubush & Hunter were accepted for the four-story City Hall building; cost, \$600,000.

Louisville, Ky.—An ordinance from the Board of Public Works has been referred to the Committee on Wharves, which provides for the appropriation of \$3,845.82 for the paving of the public wharf.

New Orleans, La.—The citizens have voted in favor of authorizing the Dock Board to issue \$3,500,000 bonds; act authorizing the new issue allows proceeds of the issue to be expended in the extension of existing wharves, building new wharves, erecting sheds, constructing roadways and other improvements; for the purchase of suitable dredges, barges and tugboats.

Baltimore, Md.—Subway Engineer Phelps has plans, under new subway loan, for extension of conduits in bed of Baltimore street and extension of trunk lines in western and southwest part of city; provision will also be made for taking care of electric power which will shortly be brought to Baltimore from McCall's Ferry plant.

Boston, Mass.—Boston should burn its garbage mixed, at small plants scattered about the city, in order to reduce teaming expense, is the conclusion arrived at by the Commission appointed some time ago by Mayor Hibbard to investigate the problem; the Commission consists of F. R. Bangs, Arthur M. Huddell, Frank L. Young and William Jackson.

Boston, Mass.—G. F. Parkman, city, bequeathed \$5,000,000 for the maintenance and improvement of public parks.

Lowell, Mass.—Council is considering an order to appropriate \$350 for shower baths in the Hose No. 7 fire house.

Lynn, Mass.—Council has passed order appropriating \$10,000 for the procurement of plans for the harbor development.

Kansas City, Mo.—The City Comptroller has recommended the construction of a garbage disposal plant.

Atlantic City, N. J.—Council has voted to reduce the funds available for the drainage

project from \$400,000 to \$100,000; waterway is to be of concrete broad enough and deep enough for power boats; there will be driveways on either side and it will be spanned by ornamental bridges.

Newark, N. J.—Ernest F. Guilbert, architect for the Board of Education, has prepared preliminary plans for a two-story brick gymnasium, adjoining the high school; cost, \$50,000.

Brooklyn, N. Y.—Gilbert Elliott is advocating the purchase of 2,000 acres of land within the Borough of Brooklyn for boulevards and parks.

Geneva, N. Y.—The Board of Health is discussing more satisfactory system of garbage collections; amount needed, \$3,000 to \$4,000; Clerk Mulcahy has been corresponding with other cities in regard to the methods in vogue for taking care of the garbage; in case the request for funds is granted this year, it is expected that some sort of a garbage collecting system will be inaugurated by the city next year.

Newburgh, N. Y.—The Park Commissioners plan to have a pavilion in Downing Park on the site of the old house torn down after it was vacated by the Health Board; the idea is to put down a concrete floor and erect uprights with an open top, over which vines can be trained forming an arbor, furnishing shade; Frank E. Estabrook has drawn a sketch of the proposed pavilion.

New York, N. Y.—Comptroller Metz has begun advertising the sale of \$12,500,000 4 per cent. stock and bonds of the City of New York; it includes \$7,000,000 corporate stock for various municipal purposes; \$4,000,000 for water supply; \$750,000 for the construction of rapid transit railroad; \$250,000 for the New York Free Public Library, and \$500,000 assessment bonds for street improvements; the bonds will run fifty years; bids will be opened November 23.

Rochester, N. Y.—Council is considering tree planting on Field, Popular and Wilmington streets; cost, \$548.—Wm. Ward, City Clerk.

Syracuse, N. Y.—The Board of Contract and Supply has rejected all bids recently received for plumbing in the City Hall Annex in the old Court House; new bids are to be asked.

Yonkers, N. Y.—Architect George Starin Cowles, 8 Getty square, is completing plans for a two-story and basement public bath house, 75x87 feet, at Yonkers avenue and Oak street, for the Board of Health; Flemish bond red brick, galv. iron cornice and skylight, hardwood finish, mosaic and tile floors, gas and electric fixtures, ninety shower baths, lavatories, steam heat and swimming pool 29x54 feet, \$30,000; bids will be received by the City Council in a few days.

Cincinnati, O.—President John Kilgour, of the Cincinnati and Suburban Telephone Company, has donated fifteen-acre tract adjoining the Observatory on Mt. Lookout to the city of Cincinnati for park purposes.

Lima, O.—City authorities will advertise for the sale of \$6,000 park bonds.

Muskogee, Okla.—A patrol wagon is being urged for Police Department.

Enid, Okla.—Mayor Stephenson has called a special election Dec. 1, to pass on \$250,000 bonds for improvements, including \$125,000 for a storm sewer, \$25,000 for septic tanks and \$100,000 for water extension and improvement in the Fire Department.

Lawton, Okla.—The Board of Trade is urging the necessity of a greater number of public parks or a park in each ward.

Newport, Ore.—Council has granted to Warren, Hall & Co., of Newport, a franchise for an electric light plant, cold storage, creamery and ice plant; probable cost of plant, \$25,000.—M. Wygant, City Engineer.

Portland, Ore.—Believing Portland should own and operate its own garbage collecting and incinerating plant, several members of the Council will fight the proposed plan of awarding a 25-year franchise to a private corporation to dispose of the garbage of this city; there is a proposition on foot to install a municipal garbage collecting and incinerating plant.

Portland, Ore.—Steps will be taken to acquire about 180 acres of land on Mount Tabor for a city park as soon as the proper arrangement of details can be perfected by the City Park Board and the City Council; if the prices asked are considered exorbitant, steps will be taken to condemn the land in the courts.

Parnassus, Pa.—Architect C. J. Reiger, Pittsburg, is preparing plans for a two-story municipal hall for the borough; cost, \$20,000.

Philadelphia, Pa.—Architect W. Bledyn Powell has completed plans for two three-story police stations for the Board of Public Safety.

Pittsburg, Pa.—The Board of Public Works has ordered the condemnation of property in Perryville avenue district to be used for park purposes.—Geo. W. Guthrie, Mayor.

Tarentum, Pa.—M. Burke, Chairman Health and Sewer Committee, is taking

bids for a garbage furnace, from 10 to 15 tons' capacity, and building to house same.

Williamsport, Pa.—The City Engineer has been requested to meet with the Highway Committee at its next session and assist them in formulating a plan for street cleaning by contract.

Humboldt, Tenn.—The \$30,000 5 per cent. city bonds for street improvements which were voted about one year ago and sold recently have been signed and delivered to the city authorities and the money is now in a Humboldt bank.

Weatherford, Tex.—City Council is preparing to purchase a 7-ton power roller to be used on the streets; negotiations in that direction are pending.

El Paso, Tex.—Plans will soon be prepared for a \$25,000 addition to the jail.

Seattle, Wash.—Chief of Police Irving Ward is urging the providing of sub-stations for the Police Department at Ballard and Fremont.

Seattle, Wash.—Council has appropriated \$15,000 for construction of city stables and shops.—R. H. Thomson, City Engineer.

Seattle, Wash.—The Finance Committee of the City Council has authorized two proposed ordinances submitting to the people at a special election Dec. 22 two bonding propositions, one for \$500,000 for the completion of the extensions to the municipal lighting plant and \$255,000 for permanent municipal improvements, including the following allowances: Comfort stations, \$20,000; stables and stable sites, \$5,000; fire house sites, \$25,500; public library approach, \$33,000; stables and shops, \$29,900; fire houses, \$38,000; pest house, \$15,000; bridges, \$88,000.

Crandon, Wis.—Plans are being prepared by Architect Fremont D. Orff, Minneapolis, Minn., for building a \$60,000 Court House, 62x92 feet, two stories high.

Milwaukee, Wis.—Alderman Edward A. Wittig has appealed to the people for support in his plan of filling in the lake; he maintains that by acquiring the entire lake front from Russell avenue to Oklahoma avenue, a frontage of more than 6,300 feet, the city would secure an area of 93 acres, or about the size of Lake Park and Juneau Park combined, for practically nothing; also advocates extending the park into the lake about 640 feet along a length of a mile and a quarter.

BIDS RECEIVED

Selma, Ala.—City has awarded contract to Crockett Paving Company, Birmingham, for construction of sanitary sewer 2½ miles long, in North Selma; main sewer to be 12-inch pipe.—Julien Smith, City Engineer.

Los Angeles, Cal.—The Barber Asphalt Paving Company has contract for paving Downey avenue for \$92,969.

Oakland, Cal.—The contract for the construction of the auxiliary salt water pumping plant on the shores of Lake Merritt has been awarded to the Healy-Tibbitts Construction Company, 268 Market street, San Francisco, at \$21830.

Hartford, Conn.—Proposals for the Vine street sewer were received and John M. Ferranti, the lowest bidder, was awarded the contract; the sewer is to be of 10 or 12-inch tile, and his bid amounted to \$1,018.75; the next lowest bidder was Chas. H. Slocumb, \$1,081; others were F. B. and W. H. O'Neil, \$1,202.50; Bernardino & Silvestri, \$1,211; A. W. Byrne, \$1,315.

Sharon, Conn.—O. T. Benedict, of Pittsfield, Mass., has contract to improve by grading and telfording 9,690 feet of road in Sharon at 90 cents per linear foot for graveling and \$1.50 for telford.—Jas. H. MacDonald, Highway Commissioner, Hartford.

East St. Louis, Ill.—W. H. Hill has contract for paving 26th street from State street to Illinois avenue at the following bid: 10,882 square yards brick paving, \$1.40 to \$1.49 per square yard, according to brick used; 240 feet 15-inch drain pipe laid, 68 cents; 5,790 feet sandstone curb, 54 cents; 1,240 cubic yards excavation placed in fill, 20 cents; 4,800 cubic yards fill in excess of excavation, 50 cents; total, \$21,173; totals of other bids: Kelly & Gaynard, \$21,923; Meyers Construction Co., \$22,012, and Walter Coonan, \$22,613.

Indianapolis, Ind.—The Commissioners of Marion County have awarded contract for constructing the County Line Gravel Road to Holloran & Haverstick, for \$11,500.

The following bids were received by the Board of Public Works for the construction of the Brightwood sewer system: John Jenkins, 1531 Lewis street, \$9.03 per linear foot (awarded contract); Mansfield Engineering Company, \$10.29; Sheehan Construction Company, \$10.72; American Construction Company, \$11.42; William Yates & Co., \$11.48.

R. T. Pickens has secured the contract for constructing a circular sewer 4 feet 6 inches in Sherman drive, at about \$6,000.—Blaine H. Miller, City Engineer.

Highest bid received for wrecking buildings on City Hall site was from Rev.

Thomas H. Nelson, \$1,400.

Muncie, Ind.—The Board of County Commissioners considered bids for road improvements which will represent a cost of more than \$100,000 and contracts were let as follows: Improvement of Higman road, Center township, a continuation of the brick road on West Jackson street, E. R. Freshwater & Sons, of Ohio, \$39,900; Cunningham, of Selma, was awarded contract for Meeks road in Liberty township, at \$10,975; Jacob A. Jenkins for Cecil B. road, Liberty township, \$4,888; Frank Hines, city, for Wilson road, Center township, \$7,450; Drago road, Center township, Thomas E. Prutzman, \$9,054; also Hawkins road, at \$2,990; Miltenberger & Justice, Everett road, Center township, \$2,685; also Davis road, Delaware township, \$2,025; Frank Hines, city, Williams road, Center township, \$2,300; Henry McClellan, Fadeley road, Center township, \$1,753.70; Jacob A. Jenkins, Carmichael road, Liberty township, \$6,202; M. A. Cunningham, Cecil road, Liberty township, \$7,069; also Duncan road, Liberty township, \$4,105; Patterson Brothers, the Stiffer ditch, bid being \$6,684.05.

Sioux City, Ia.—A few bids were opened and a contract for sidewalks in Morningside was awarded to the California Cement Company, at 16 cents a square foot; the bid of the Gutta Percha and Rubber Manufacturing Company, of Chicago, for sewer hose at \$1.10 a foot, was laid over a week.

Vincennes, Ind.—The Board of Works has let the contract for the improvement of West Sycamore street from Schley to the Terre Haute road, with concrete sidewalks and stone curbing on both sides of the street; there were two bids submitted, that of Foulkes, Forbes & Co. being considered the lowest and best, so the contract was awarded to that firm. The winning firm bid 10½ cents on sidewalk and 42 cents on curbing; the bid of Ed Pennington was 11 cents and 43 cents.

Louisville, Ky.—The contracting firm of Herr & Raftus, of Dorchester, Mass., having dissolved partnership recently, announcement has been made that a contract awarded that company by the Louisville Sewer Commission for the construction of a sewer on Green street from Garden to Shelby, for \$7,000, has been transferred to Schultz & Vogt Company, a local firm, which also has a contract for building a sewer on Broadway, from Sixth to Ninth streets, allowed them by the Commission some time ago.

The contract for macadamizing a portion of Hite avenue is reported awarded to Geo. W. Gosnell, 327 Fifth street, for \$5,200.

Waverly, La.—The contract for the construction of the power house for the electric light and power plant and water works system has been awarded to G. W. Clark, of Waverly, at \$10,400.

Cumberland, Md.—Christopher Roeder, city, has contract, at \$4,144.44, for curbing and paving sidewalks on Springvale avenue.

Boston, Mass.—At a conference held with Judge James R. Dunbar presiding, the contract for the enlarging of the Suffolk County Court House was awarded to Connors Brothers Company, of Lowell and Boston, for \$692,345; the Connors Brothers were the second lowest, the low figures being submitted by F. T. Nesbit & Co., of Buffalo, N. Y., at \$672,000; among the bidders who submitted figures were the Norcross Brothers Company, \$786,000; L. F. Soule & Son Company, \$767,941; John Gill & Son, \$730,193; William Crane, \$757,402; Woodbury & Leighton Company, \$797,402; George A. Fuller & Co., \$699,960; McNeil Brothers, \$825,000.—James R. Dunbar, Joseph J. Corbett and William H. Wellington, Commissioners; George A. Clough, Architect.

C. W. Dolloff & Co., 20 Central street, have contract from the B. & A. R. R. to pave about 11,000 square yards and to set 7,000 feet of curb at both the Kneeland street yards, Boston, and the East Cambridge yard, furnishing all material; also the contract from the N. Y. N. H. & H. R. R. to set curb and repave Binford street, South Boston; also on T. Wharf, Boston, to furnish and set curb and furnish and lay new blocks, furnishing all material for same, on the south side of T. Wharf; also a contract from the Mystic Wharf and Storage Company, to furnish all material and pave a driveway in Charlestown.

Brookline, Mass.—James Driscoll & Son have been awarded contract for the sewer and surface water drain in Saw Mill Brook Valley, at \$4,166.50; other bids were: Dennis Driscoll, \$4,907.25; T. J. Kelley, \$6,097; Eichorn Bros., \$7,167.50, and M. J. O'Hearn, \$7,305.25.

Great Barrington, Mass.—J. F. McCormick, of East Providence, R. I., has contract to construct 3½ miles of State highway, for which a State appropriation of \$50,000 has been made.

Detroit, Mich.—Bids were opened at the office of the Public Lighting Commission for constructing concrete wharf on premises of Commission in rear of power house, and the

Great Lakes Dredge & Dock Company, of Cleveland, O., bid \$9,000.

F. Porath & Sons, 873 Twenty-fifth street, have secured the contract for paving with brick a portion of Michigan avenue for \$11,200.

Buffalo, Minn.—Contract was let to the North Western Electric Equipment Co., 181 East Fourth street, St. Paul, for a 50-kw. alternator, 19 arc lamps, transformers, etc., also pole line and wiring and construction material. O. Claussen, Engineer, St. Paul; H. C. West, Recorder.

Cokato, Minn.—The contract for drilling a deep well has been let to E. R. Bristol, at \$5 per foot complete.

Dear River, Minn.—W. D. Lowell, of Minneapolis, has the contract for putting in six blocks of water mains.

Duluth, Minn.—The lowest bid received by the Board of Public Works for constructing concrete culvert and fill on Grand avenue, near Mathews street, was submitted by Gulbranson Bros., for \$7,337.

St. Paul, Minn.—The contract for constructing sewer on Delaware avenue and Baker street has been awarded to D. W. Moore, 902 Edmund street, for \$11,397; Engineer's estimate, \$11,500; the Board also awarded a contract for grading Pascal avenue, from Wynne street to Midway Parkway, to Keough Bros., on a bid of \$1,762, \$1,000 less than the Engineer's estimate.

Columbus, Miss.—City has awarded contract to P. C. Campbell, city, for construction of proposed concrete sidewalk; about 33,000 feet.

Jackson, Miss.—The city has awarded the contract to the West Construction Company, Chattanooga, Tenn., at \$23,564, for constructing cement pavements and storm sewers on Royal street.—Atwell Thompson, City Engineer.

Pascagoula, Miss.—The city has awarded the contract to the Pascagoula Street Railway and Power Company for the extension of water mains to northern suburbs.—L. G. Adams, City Clerk.

Springfield, Mo.—The Jarrett Construction Company has entered into contract with the city to pave Benton avenue from Center to Pacific streets, at \$2.31½ per square yard; concrete will be used.

Wood River, Neb.—F. K. Wheeler has been awarded a contract for the construction of an electric light plant and water works system for \$19,550.

Salem, N. H.—Edward Adams, North Andover, Mass., has been awarded a contract for macadamizing 5,500 square yards of roadway; bids were on a cubic yard and ton basis.

Cape May, N. J.—We are informed that the contract for constructing 2,094 miles of gravel road known as Schellenger's Landing road (bids opened November 4), has been awarded to J. L. Clymer, Philadelphia, Pa.

Trenton, N. J.—The Delaware River Quarry and Construction Company has contract to macadamize a portion of Liberty street.

New Brunswick, N. J.—Contracts for the construction of sewers in Delevan street, between Jones and Throop avenues, and in Comstock street, between Commercial and Jones avenues, have been awarded to John F. Kerwin and James Lyons; the bids were as follows: John Van Deusen, 8-inch pipe in Delevan street, \$1.05 per linear foot; in Comstock street, 80 cents per linear foot; manholes, \$35 each; 5-inch Y branches, 35 cents each. Abraham Jellin, 8-inch pipe in Delevan street, \$1.30; in Comstock street, \$1.09; manholes, \$30 each; 5-in. Y branches, 50 cents each. Patrick J. Moran, 8-inch pipe in Delevan street, \$1.05; in Comstock street, 91 cents; manholes, \$48 each; 5-inch Y branches, 75 cents. John F. Kerwin, 8-inch pipe in Delevan street, 99 cents; in Comstock street, 85 cents; manholes, \$45 each; 5-inch Y branches, 65 cents. James Lyons, 8-inch pipe in Delevan street, \$1.15; in Comstock street, 73½ cents; manholes, \$39.50 each; 5-inch Y branches, 50 cents each. James Sheehan, 8-inch pipe in Delevan street, \$1.08; in Comstock street, \$1.06; manholes, \$42 each; 5-inch Y branches, 30 cents.—Frederick Schneider, City Engineer.

Weehawken, N. J.—The Layton Fire Clay Company, of McKeesport, Pa., has secured contract for furnishing 7,000 square yards of repressed paving brick for street improvements in Weehawken.

Albany, N. Y.—Bids were opened November 10 at the office of Fred. Skene, State Engineer and Surveyor, for the improvement of 22 State highways, Roads Nos. 309 to 554, of which 17 have been awarded:

Road No. 309—Post, Section 2, Ulster County, 6.48 Miles.—Jas. E. Martin, \$68,029; DeGraff and Hogeboom, \$60,274; McNamee & Rice, \$58,549; Thos. O'Hern, \$52,117; R. S. Kasson, \$59,169; Shanley-Morrissey, \$63,892.

Road No. 321—Reservation-Varick Road, Seneca County, 4.31 Miles.—Stewart-Kerbaugh-Shanley Company, \$43,209; Booth & Flinn, \$44,947; H. C. Schroeder, \$37,691; F.

A. Brotsch, Rochester, \$35,156 (awarded contract); John H. Gordon, \$39,922.

Road No. 346—Sprakers-Rural Grove Section 2, Montgomery County, 2.52 Miles.—D. S. Snell & Co., \$16,401; Shanley-Morrissey Company, \$16,397; Central and Eastern Construction Company, Albany, \$15,723 (awarded contract).

Road No. 347—Canajoharie-Sharon Springs, Section 2, Montgomery County, 2.94 Miles.—D. S. Snell & Co., \$27,030; Jos. Walker, New Paltz, \$25,278 (awarded contract); F. E. Ellis, \$33,634; Shanley-Morrissey Co., \$28,805; Central and Eastern Construction Company, \$25,377.

Road No. 392—Old Orchard, Section 1, Orleans County, 3.342 Miles.—W. Truesdale, \$20,852; Hollihan & Daley, \$20,372; Chambers & Grady, \$21,062; F. A. Brotsch, Rochester, \$18,342 (awarded contract); Greece Construction Company, \$19,949; Mosher & Sommers, \$21,936; F. W. Knickenberg, \$21,096; Booth & Flinn, \$21,223; Thos. Hucknell, \$20,412; Stewart-Kerbaugh-Shanley Company, \$27,556.

Road No. 412—Port Jervis-Sullivan Co., Section 1, Orange County, 5.74 Miles.—Jos. Walker, \$56,431; J. C. Tierney, \$64,879; Bellew & Merritt, \$57,629; Shanley-Morrissey Company, \$63,504; Orange County Road Company, \$63,657; DeGraff and Hogeboom, \$55,401; Spuyten Duyvil Construction Company, \$69,081; F. J. Gallagher, \$70,034; J. E. Consalus, \$60,335.

Road No. 413—Highland Mills-Monroe, Orange County, 3.27 Miles.—Orange County Road Construction Company, \$32,713; Jos. Walker, \$31,548; DeGraff & Hogeboom, \$30,410; Shanley-Morrissey Company, \$30,970.

Road No. 440—Philadelphia, Jefferson County, 5.4 Miles.—(Two bids) (a) granite, (b) limestone: Cement P. & C. Company, \$41,839 (a), \$45,025 (b); Brown & Low, \$54,882 (a), \$59,904 (b); Buckley Construction Company, Plattsburg, (a) \$43,202, (b) \$41,609; (awarded contract); Spuyten Duyvil Construction Company, \$46,270 (a), \$43,762 (b); Chambers & Grady, \$49,986 (a), \$53,173 (b); Ripton & Murphy, \$65,963 (a), \$64,988 (b); Wm. J. Semper, \$45,706 (a), \$45,706 (b).

Road No. 444—Riverside Drive, Broome County, 1.14 Miles.—Newport Construction Company, \$11,565 syenite, \$12,186 trap rock; Edwin D. Baker, \$12,554 syenite, \$12,546 trap rock.

Road No. 463—Manheim Centre-Salisbury, Herkimer County, 5.52 Miles.—Jos. Walker, \$64,248; Brown & Lowe, \$71,382; S. A. Seymour, \$75,047; Shanley-Morrissey, \$66,664; Buckley Construction Company, \$61,825; Bellew & Merritt, \$61,735.

Road No. 464—Salisbury Centre-Stratford, Herkimer County, 5.46 miles.—Kingsbury Construction Company, \$45,018; Rockefeller Bros., Brooklyn, \$38,839 (awarded contract); Hallihan Bros., \$51,072; Newport Construction Company, \$44,406; Brown & Lowe, \$47,130; C. H. Flanagan, \$44,014; Malloy & Davis, \$39,929; Shanley-Morrissey, \$40,872; Buckley Construction Company, \$40,427; Bellew & Merritt, \$44,889.

Road No. 480—Buffalo, Section 4, Monroeville County, 3.02 Miles.—F. W. Knickenberg (Buffalo), \$33,024 (awarded contract); Greece Construction Company, \$35,124; Booth & Flinn, \$37,755; Stewart K. Shanley, \$35,675; Mosier & Summers, \$34,938; F. A. Brotsch, \$38,397.

Road No. 481—Dispatch-Pittsford, Monroe County, 1.99 Miles.—Greece Construction Company, \$15,387; Booth & Flinn, \$16,231; Monroe Roads Company, Pittsford, \$12,549 (awarded contract); Stewart K. Shanley, \$14,315; F. A. Brotsch, Jr., \$13,412; A. J. Rockwood, \$14,897; Newport Construction Company, \$17,440.

Road No. 489—Tully-Onondaga County, 4.44 Miles.—Stewart K. Shanley, \$42,175; Booth & Flinn, \$38,052; A. J. Rockwood, Rochester, \$36,646 (awarded contract).

Road No. 491—Hilton-Bartlett's Corners, Monroe County, 1.01 Miles.—John Boylin, Barnards, \$7,788 (awarded contract); Greece Construction Company, \$8,478; F. A. Brotsch, \$9,476; Booth & Flinn, \$9,402; Stewart K. Shanley, \$9,061; Thos. Hucknell, \$8,041; R. J. Cole, \$8,165.

Road No. 493—Mendon-Pittsford, Monroe County, 6.26 Miles.—Monroe Roads Company, \$52,513; F. A. Brotsch, Jr., \$56,983; Greece Construction Company, \$52,129; A. J. Rockwood, \$52,561; Mosier & Summers, Buffalo, \$51,621 (awarded contract); Hollihan & Darley, \$48,308; Booth & Flinn, \$54,565; Stewart K. Shanley, \$57,757.

Road No. 504—Troy-Spieglestown, Rensselaer County, 1.69 Miles.—Elmore & Hamilton, \$15,905; Thos. H. Karr, Troy, \$14,245 (awarded contract); Fred E. Ellis, \$22,455; Central and Eastern Construction Company, \$15,774; Reardon & Gilchrist, \$16,512.

Road No. 536—Schodack Centre-Nassau, Rensselaer County, 5.19 Miles.—Rockefeller Bros., Brooklyn, \$49,895 (awarded contract); Elmore & Hamilton, \$50,179; Jos. Walker, \$55,169; Thos. H. Karr, \$50,515.

Road No. 543—Johnstown Broadalbin, Section 2, Fulton County, 6.35 Miles.—Kingsbury Construction Company, \$46,559;

Brown & Lowe, \$52,326; Buckley Construction Company, \$47,288; Rockefeller Bros., \$46,139; DeGraff & Hogeboom, Bloomington, \$41,679 (awarded contract); Malloy & Davis, \$43,885; Bellew & Merritt, \$49,482; Linehan & Bunham Co., \$47,645; Shanley-Morrissey, \$50,161.

Road No. 547—Willetts-East Willston-Westbury, Nassau County, 6.43 Miles.—Andrews Bros., \$69,121; Bellew & Merritt, \$69,428; Henry J. Mullen, \$68,310; Twombly & Eldert, \$74,183; Robertson & Gerehart, \$65,125; Long Island Construction and Supply Company, Long Island City, \$63,189 (awarded contract).

Road No. 553—Fly, Onondaga County, 2.33 Miles.—Stewart K. Shanley, \$17,890; Booth & Flinn, \$19,416; F. A. Brotsch, Rochester, \$15,565 (awarded contract); C. H. Flanagan, \$19,333.

Road No. 554—Fabius, Onondaga County, 4.91 Miles.—Booth & Flinn, \$44,697; Stewart K. Shanley, \$49,826; Joseph McCormick, Jr., Providence, R. I., \$41,525 (awarded contract).

Brooklyn, N. Y.—The T. A. Gillespie Company, Westinghouse Bldg., Pittsburg, Pa., was awarded the contract for the delivery, laying and completion within a year of sixteen miles of water mains in the Borough of Brooklyn, at \$2,000,000; the steel for the pipe, it is understood, will be supplied by the National Tube Company; the pipe will be 6 feet diameter.

Buffalo, N. Y.—Commissioner Ward has opened bids for the construction of two sewers. For building a 12-inch tile sewer in Goemble street, between Doat and Rohe street, and W. G. Smith was the lowest bidder at \$681; Spriss & Fanning are the lowest bidders for the sewer in Hedley street, between Jefferson and Meach streets, at \$1,465.

The Board of Supervisors has awarded a contract to the Dubois Iron Works, of Dubois, Pa., at \$6,762 to install a gas engine in the 74th Regiment Armory in connection with the electric light plant.

Geneva, N. Y.—The Geneva-Seneca Electric Company has let general contract to the Delaney Roberts Construction Company, 103 Park avenue, New York, for a fireproof 1-story brick power-house, 75x50 feet; the General Electric Company, Schenectady, has the contract for the equipment; total cost, \$25,000.

Long Island City, L. I., N. Y.—Bids were opened by Lawrence Gresser, President Borough of Queens, for constructing sewers in portions of 17th avenue, and the contract has been awarded to the Gore Engineering and Contracting Company, 206 Broadway, New York, at \$10,129.

Contracts for paving were awarded by Lawrence Gresser, President Borough of Queens, as follows: 18th avenue, to H. J. Mullen, 289 Fulton street, Brooklyn, N. Y., \$7,217; Vandeventer avenue, to Trossi & Cataluzzi, \$14,183.

New York, N. Y.—The following are the totals of bids received by John F. Ahearn, President Manhattan Borough, for regulating and repaving with asphalt on a concrete foundation the following streets: (a) Broome street from Bowery to Lewis street; (b) Cherry street from Catherine street to Jackson street; (c) Madison street from Grand street to New Bowery, between Rutgers and Pike streets; Barber Asphalt Paving Company, 114 Liberty street, (a) \$50,009, (b) \$42,178, (c) \$56,862; Continental Asphalt Paving Company, 69 Wall street, (a) \$49,974, (b) \$47,366, (c) \$61,983; Uvalde Asphalt Paving Company, 1 Broadway, (a) \$48,922, (b) \$40,866, (c) \$54,025; Standard Asphalt and Rubber Manufacturing Company, 115 Broadway, (a) \$46,147, (b) \$46,073; Sicilian Asphalt Company, 41 Park Row, (a) \$49,170, (b) \$51,085, (c) \$56,000.

The following are the bids for regulating and repaving with asphalt block, on a concrete foundation, Amsterdam avenue, from 90th street to 93d street, 94th to 99th and 106th to 117th streets; Harlem Construction Company, 2 Rector street, \$70,495; Barber Asphalt Paving Company, 114 Liberty street, \$74,235.

The following are the bids for regulating and repaving with granite block on a concrete foundation (a) 9th avenue from 34th street to 59th street, (b) 9th avenue from 12th street to 31st street: Asphalt Construction Company, 207 Broadway (a) \$123,745, (b) \$94,506; Jas. Quinn Contracting Company, (a) \$133,683, (b) \$102,718; Matthew Baird Contracting Company, 432 E. 92d street, (a) \$125,009; W. J. Fitzgerald, (a) \$117,298, (b) \$89,826; Bart Dunn, 444 E. 68th street, (a) \$116,717, (b) \$89,028; Atlanta Contracting Company, 432 E. 91st street, (a) \$116,430, (b) \$90,642; John E. Quinn, 206 Broadway, (a) \$117,205, (b) \$90,949; M. J. Fitzgerald, 312 W. 141st street, (a) \$112,632, (b) \$90,371; Scoria Paving Company, 103 Park avenue, (a) \$106,670, (b) \$81,502; Hanover Contracting Company, 215 W. 125th street, (b) \$95,150.

Bids were received by Louis F. Haffen,

President Bronx Borough, for paving work as follows: Paving with asphalt on concrete foundation bridges over N. Y., N. H. & H. R. R. (Harlem River branch) at Longwood avenue, Tiffany street, Hunt's Point road, Fille street, Bryant street, Westchester avenue, Tremont avenue, West Farms road, White Plains road, Unionport road, Williamsbridge road and Baychester avenue (a) 10,800 square yards completed asphalt pavement, including binder course, and keeping pavement in repair for five years from date of acceptance; (b) 5,500 square yards completed asphalt pavement on sidewalks, and keeping same in repair for five years; (c) totals: Standard Asphalt Rubber Company, (a) \$1.38, (b) 70 cents, (c) \$18.754; Barber Asphalt Paving Company, (a) \$1.40, (b) 72 cents, (c) \$19.080.

Paving with asphalt on concrete foundation bridges at E. 149th and Barretto streets and Leggett, Lafayette, Longfellow and Ludlow avenues, in all about 6,150 square yards asphalt in roadways and 4,050 square yards asphalt on sidewalks: Standard Asphalt Rubber Company, \$11.322, and Barber Asphalt Paving Company, \$11.526.

Paving with asphalt block on concrete foundation 165th street and Clay avenue: (a) 5,420 square yards completed asphalt block paving and keeping the same in repair for five years from date of acceptance; (b) 883 cubic yards concrete, including mortar bed; (c) 3,125 linear feet old curb rejoined, recut on top and reset in concrete; (d) totals: Continental Asphalt Paving Company, (a) \$1.78, (b) \$5.92, (c) 40 cents, (d) \$16.125; Barber Asphalt Paving Company, (a) \$1.81½, (b) \$6, (c) 40 cents, (d) \$16.385; Hastings Pavement Company, (a) \$1.86, (b) \$5.84, (c) 40 cents, (d) \$16.488.

Port Chester, N. Y.—The Village Board of Trustees has let general contract to John J. Nethercott for constructing two fire engine houses, at \$11,349 and \$6,743, respectively.—C. D. Camp, Village Clerk.

Schenectady, N. Y.—The Board of Contract and Supply on November 4 awarded the contract to Kellam & Shaffer, Maxon road, Schenectady, for the construction of a sewer from Glenwood to Parkwood boulevards. Charles W. Trumbull is City Engineer.

Sherman, N. Y.—We have been advised that F. T. Benson & Co., Falconer, N. Y., was awarded the contract on November 7 by the village at \$15,377 for the construction of a water supply system. E. A. Wilder is Consulting Engineer, Fredonia, N. Y.

Troy, N. Y.—The Board of Contract and Supply has received proposals for the extension of Rensselaer street from the present city line to the river front, and the construction of a dock, and also bids for the repaving of Second street, from Congress to Division streets; the bidders for the Rensselaer street work were Richard Parrott, John Flynn, Jr., the McDonough Construction Company, Golden & Lansing, and Robert J. Gleason, who was awarded contract for concrete dock at \$6,931.25.

The dock bids are as follows: Richard Parrott, timber construction, \$7,836.50; concrete, \$9,197.50; John Flynn, Jr., timber dock, \$7,138.75; concrete, \$7,988.75; McDonough Construction Company, concrete, \$7,027.50; Robert J. Gleason, timber, \$5,931.25; concrete, \$6,931.25; Golden & Lansing, timber, \$8,337.40; concrete, \$8,290.

For the paving of Second street three bids were received from A. J. Langfeldt, Hassam Paving Company and the North Hudson Contracting Company.

City Engineer Grimes reported that the contract for the paving of River street, from Bridge avenue to Ferry, had been signed by the Hassam Paving Company and the city authorities.

Yonkers, N. Y.—Fred E. Gross was awarded the contract by the Board of Contract and Supply for the construction of a sewer in Sherwood avenue, at \$8,890. Other bidders were: Charlton & Weston, \$9,000; O'Connor-McIntire Company, \$9,455; Kelly & Hannifin, \$9,698; McDonald & Murray, \$10,700; Thomas Grady, \$10,775; M. J. Callahan, \$13,000; Fisher & Cozzo, \$16,683.

Bids were received as follows by the Board of Contract and Supply for street grading: Grading Sherwood avenue, McDonald Murray, \$15,400 (awarded contract); Fred E. Gross, \$15,649; Charlton & Weston, \$15,737; Kelly & Hannifin, \$15,940; O'Connor-McIntire Co., \$16,953; M. J. Callahan, \$17,725; Thomas Grady, \$18,450; Fisher & Cozzo, \$20,089. Grading Villa avenue, Charlton & Weston, \$6,057 (awarded contract); Fred E. Gross, \$6,178; McDonald & Murray, \$6,300; F. A. Cianfaglione, \$6,600; Kelly & Hannifin, \$6,450; Fisher & Cozzo, \$8,106; M. J. Callahan, \$8,697. Grading Convent avenue, Fred E. Gross, \$3,333 (awarded contract); McDonald & Murray, \$3,500; James J. Corbals, \$3,681; Kelly & Hannifin, \$3,865; Charlton & Weston, \$3,945; Kearns & Hart, \$4,100; F. A. Cianfaglione, \$4,284; M. J. Callahan, \$4,300. Grading Convent avenue, Kearns & Hart,

\$4,800 (awarded contract); McDonald & Murray, \$4,800; Fred E. Gross, \$4,900; Charlton & Weston, \$4,983; Kelly & Hannifin, \$4,998; F. A. Cianfaglione, \$5,580; M. J. Callahan, \$6,390; James J. Corbals, \$5,699.

Valley Stream, L. I., N. Y.—The T. A. Gillespie Co., of Pittsburg, Pa., offices 90 West street, New York City, has secured contract for furnishing, delivering and laying a 72-inch steel pipe line, ¾ inch thick, from Valley Stream to Amityville, to supply Brooklyn with water, for about \$2,033,865; bids for this work were opened July 31 by the Board of Water Supply, Gas and Electricity, but the award was held up by an injunction.

Manchester, N. C.—The Little River Power and Transmission Company, which was recently incorporated, has awarded a contract to the Thomas B. Whitted Company, of Charlotte, N. C., for the construction and equipment of its power plant. The Little River Power and Transmission Company has a franchise to furnish electricity for lamps in Manchester and will operate a street railway system in Fayetteville.

Canton, O.—The contract for the grading, laying of flagstone sidewalks, and by other-wise improving St. Elmo and Gay streets, has been signed by Contractor John Skeeles and the members of the Board of Public Service; this work must be done by June of next year; part of the material is already on the ground.

Coal Grove, O.—The Village Council received three bids for the paving of Main street, as follows: Petersburg Fire Brick Company, \$17,450; Ironton Construction Company, \$20,138; F. J. Horschel, \$20,015.15. The Petersburg Fire Brick Company has the lowest bid and is a home industry and no doubt will be awarded the contract.

Columbus, O.—The Board of Public Service has awarded the following contracts for paving: Columbus avenue, Wager to Carpenter, N. B. Abbot, \$9,755.75; Fifth street, Moulter to Jenkins, H. J. Shaw, \$4,374; Gustavous Lane, Champion to Sherman, N. B. Abbot, \$1,291; Hunter avenue, N. B. Abbot, \$4,943; Pearl street, Stone to Hittorf, Giegele & Garner, \$2,660.

Defiance, O.—The Toledo-Massillon Bridge Company of Toledo has secured the contract for the steel work on the lift bridge over the Miami and Erie Canal at Fifth street at \$5,100.

Hamilton, O.—The Board of Public Service opened bids on 57 gate valves for fire hydrants; the Darling Pump and Manufacturing Company of Williamsport, Pa., bid \$16 each, and the Bourbon Copper and Brass Works of Cincinnati, \$11 each.

The Board of Public Service, Engineer L. A. Dillon and Solicitor John B. Connaughton, has awarded contract for resurfacing High and South Third streets with Bermudez Lake sheet asphalt to the Andrews Asphalt Paving Company, at \$1.19 a square yard; the gutter is to consist of four feet of brick laid at right angles.

Jefferson, O.—William Batchelor, of Conneaut, O., has been awarded the contract at \$4,787, for constructing sewer for the county.

McComb, O.—C. B. Hall & Son, of Findlay, has secured contract to pave 4,000 yards of streets at about \$8,000.

Shawnee, O.—The following bids were received for furnishing material and laying c.-i. water pipe and specials, with hydrants and valves: Richards Plumbing Company, Columbus, \$10,315; U. S. Construction Company, Columbus, \$8,358, and Pitt Construction Company, Pittsburg, Pa., \$10,699.

Springfield, O.—Bernard Higgins has been awarded the contract for two sewers by the Board of Public Safety and Thomas E. Wrenx & Co. was given the contract for the macadam work in West Mulberry street.

Steubenville, O.—The Board of Service has let contracts for two sewers to Jos. Edwards; they were Alley D, south of Franklin, and Alley E, south of Franklin, for \$401 and \$459, respectively.

Tiffin, O.—The Board of Public Service has awarded the contract to John E. King for 4,175 square yards of brick paving on North Sandusky street, at \$7,497.—John E. Diemer, Clerk.

Youngstown, O.—J. M. Reed, city, has been awarded the contract for the construction of a sewer from Robinson road through the city and across the railroad yards to the Mahoning River.

The following are the low bids for paving High street: Michael Horan, \$17,622; Kennedy Bros., \$17,759; Mullin & Caldwell, \$17,862.

Wyoming, O.—The following are the totals of bids received for the construction of sanitary sewers and a disposal plant: (a) totals without disposal; (b) total with disposal plant and electric motor; (c) totals with disposal plant and water motor: Scott & Walker, Cincinnati, (a) \$25,092; Thos. P. Strack, Cincinnati, (b) and (c), \$32,005; Evan Evans, Cincinnati, (b) \$46,928, (c) \$46,728; Kirchner Construction

Company, Cincinnati, (b) \$47,865, (c) \$47,765; Waller S. Hollaender, Cincinnati, (b) \$40,115; Bosler & Flynn, Chattanooga, Tenn., (b) \$47,090, (c) \$46,990; C. S. Lambie Company, Pittsburg, Pa., (b) \$39,255, (c) \$39,255; T. J. Backus Construction Company, (b) \$44,665, (c) \$44,689. Engineers, Riggs & Sherman Co., of Toledo.

Lawton, Okla.—Final contract was signed between the City Council and Charles H. Shaw of Muskogee for paving seven blocks of D avenue, the principal business street; Lawton natural rock asphalt, found in beds near here, is to be used.

Altoona, Pa.—Two bids were received by the Board of Public Works for the construction of a sewer in Crawford avenue between Fifteenth and Sixteenth streets, Isaac Bender and E. A. Herr competing for the work; the latter was low bidder and was awarded the contract.—J. B. Andrews, Chairman Board.

Chambersburg, Pa.—E. C. Hafer of this place has the contract, at \$5.50 per cubic yard, for the construction of a concrete dam.—E. C. Frey, Clerk Town Council.

Dawson, Pa.—The borough has let the contract for paving Howell street to Thomas Sweeney Company of Pittsburg and the stone curbing of the same to Louis Costa, stone contractor of Dickinson Run.

Donora, Pa.—The Donora and Eldora Street Railway Company has awarded the contract for the construction of its road, which will connect this place with Eldora, a distance of about four miles, to Frank Donatella, of Pittsburg.

Harrisburg, Pa.—Five contractors submitted bids for the Fifteenth street sewer that will extend from North to Herr street, and Lynch and Hessenberger were the lowest bidders, their bid being \$1,749.59; the unsuccessful bidders were Stucker Bros. Construction Company, \$1,874; P. J. Bradley, \$1,750; Henry Opperman, \$1,798; John N. McCulloch, \$1,785.

The Fire Committee of Councils has awarded the contract for 1,000 feet of cotton hose to the Eureka Fire Hose Company and for 1,500 feet of rubber hose to the Voorhes Rubber Company; Fire Chief Garverich recommended the Conqueror brand of cotton hose made by the Voorhes Company, saying that that amount of hose could be used by the Hope Fire Company which has a well-equipped drying tower; the Paragon brand of cotton hose, made by the Eureka Company, was also recommended by the Chief; the Conqueror hose stands a pressure of 400 pounds and is guaranteed for five years; the Paragon brand is guaranteed to stand a 400-pound pressure and is guaranteed for six years; the Chief said that at a fire the pressure runs from 120 to 150 pounds and that when a hose is played from a ladder the pressure is only ninety pounds; the recommendation of the Chief was approved.

The bidders, their bids, the water pressure and number of years the hose is guaranteed follow:

Double Service Fire Hose Company: Cotton hose, 97½ cents, 400 pounds, 4 years. Voorhes Rubber Company: Carteret brand, cotton, 70 cents, 400 pounds, 3 years; Fire Model, cotton, 75 cents, 400 pounds, 4 years; Carney, cotton, 80 cents, 450 pounds, 4 years; Overall, cotton, 95 cents, 450 pounds, 5 years; Contest, cotton, 90 cents, 400 pounds, 5 years; Conqueror, rubber, \$1, 400 pounds, 5 years.

Eureka Fire Hose Company: Paragon, cotton, \$1, 400 pounds, 6 years.

Goodrich Rubber Company: Akron brand, rubber, \$1, 400 pounds, 5 years; Goodrich, rubber, \$1, 450 pounds, 5 years; National, cotton, 90 cents, 400 pounds, 5 years; Special, cotton, 85 cents, 400 pounds, 5 years.

Central Supply Company: Maltese Cross, rubber, \$1.10, 400 pounds, 5 years; Baker Fabric, cotton, \$1, 400 pounds, 5 years; Ajax, cotton, 90 cents, 400 pounds, 5 years.

Homestead, Pa.—Judge Macfarlane has handed down an opinion dismissing the equity suit of William Marsh and other taxpayers of Homestead against Burgess Louis Roth, Treasurer William Martin and the members of the Borough Council, at the cost of the plaintiffs; the action was to prevent the issuance of \$125,000 of bonds and have declared void a contract for street improvements entered into with F. J. Erbeck, formerly President of the Council.

Philadelphia, Pa.—Contracts for constructing branch sewers by the Department of Public Works have been awarded to the following: James A. Mullen, 5512 Vine street; Thomas V. Monaghan, 4240 North 15th street; Lombardi & Pasenzzi, 601 Betz Bldg.; Donato Delise, 3316 North Lawrence street; George E. Cantrell, 112 South Fourth street; David McMahon, East Chelton avenue; Patrick Durkin, 2950 North Seventh street; Joseph Moss, 1652 Wakefield street; Robert P. Ryan, 2116 North 30th street; John F. McNichol, 920 Betz Bldg.; Richard Bennis, 710 East Chelton avenue; Joseph Perna, 334 North 65th

street; total cost, \$100,150.—George R. Stearns, Director Public Works.

Reading, Pa.—Council awarded to Harry J. Adams the contract for collection, removal and disposal of garbage, offal and animals for five years at \$1.94 per ton.

Scottsdale, Pa.—For the paving of Arthur avenue, from the west side of Everson avenue to the west side of Grove street, the following firms and contractors had bids in: P. J. Flinn, of Connellsville; Uniontown Construction Company, S. G. Rath & Co., of Elizabeth, Pa.; Rinehart Brothers, of East Liverpool, O.; Homestead Supply Company, of Homestead; Maynard & Flinn, of Pittsburg, and the White Construction Company, of Vandergrift; the Homestead Supply Company being the lowest bidder was given the contract, its bid being \$9,069, as follows: 2,400 cubic yards of excavation at 38 cents, \$912; 3,200 linear feet of sandstone curbing at 53 cents, \$1,696; 350 linear feet of backing stone at 40 cents, \$140; 4,900 square yards of paving with Fairmont wire cut brick at \$1.29, \$6,321; the contractors agree to begin the paving at once and finish by June 1, 1909.

Wilkes-Barre, Pa.—The Lehigh and Wilkes-Barre Coal and Iron Company has been awarded the contract for macadamizing the mountain road at \$16,012.75; other bids were: Kingston Construction Company, \$11,049.75; Edward H. Post, \$12,837; United Construction Company, \$14,480.

Williamsport, Pa.—The Highway Committee has received bids for the Lynn street and the Fourth avenue sewers; John Schrade being low for the Lynn street sewer and Charles Dugan for the Fourth avenue, the committee will recommend the awarding of the contracts to the contractors named.

Nashville, Tenn.—Bids for furnishing the city Light Department with two circuits each of fifty alternating-current series arc lamps with regulators, transformers and necessary mast and pole pulleys and rope were opened by the Board of Public Works and the Braid Electric Company received the contract, their bid being \$1,875, while that of Herbrick & Lawrence was \$1,887.50 per circuit complete; the Braid Electric Company was also awarded the contract for extra supplies to the amount of \$405.

Bids for a large amount of iron pipe for the Water Works Department were opened by the Board of Public Works, and while action was postponed it is probable that J. H. Fall & Co. will be awarded the contract, as their bid was the lowest at \$37,382.60; in the lot there are 164 tons of 8-inch pipe; 314 tons of 12-inch, and 1,350 tons of 6-inch; the American Cast Iron and Foundry Company bid \$24 per ton for the 6-inch, \$23 per ton for the 8-inch, and \$21 per ton for the 12-inch; Keith, Simmons & Co. bid \$21.70 for the 6-inch, \$20.90 for the 8-inch, and \$20.70 for the 12-inch; J. H. Fall & Co. bid a round price of \$20.45 per ton for the entire lot; the Dimmick Pipe Company bid \$22 for the 6-inch, \$21.50 for the 8-inch, and \$21 for the 12-inch.

The following bids were received by the Board of Public Works for paving with brick the Cumberland River Bridge: W. M. Leftwich, \$1.14; Nashville Roofing and Paving Company, 97 cents; E. T. Lewis & Co., 78 cents; price given per square yard.

Austin, Tex.—The County Commissioners opened bids for the construction of the new Congress avenue bridge across the Colorado River, for which the taxpayers of the county recently voted \$200,000 to be raised by the issuance of bonds, five being received, the figures in each totalling as follows: Missouri Valley Bridge Company, of Leavenworth, Kan., \$245,615; Robert Starrie, of Fort Worth, \$186,462; Geisel Construction Company, of St. Louis, \$188,126; William P. Carmichael & Co., of St. Louis, \$176,495, and the Midland Bridge Company, of Kansas City, \$286,395.

Orange, Tex.—The Orange Ice, Light and Water Company has entered into a contract with John Newby, of Welsh, La., to drill them a 12-inch artesian well on their property here, fronting on Front street and corner of First street; the well is to be sunk a depth of 850 feet and will be about the largest in this section.

Tyler, Tex.—W. C. Whitney, one of Beaumont's building contractors, has been awarded the contract to build the new Smith County Court House; the building, completed, will cost \$150,000.

Salt Lake City, Utah.—The following bid was received from P. J. Moran for paving the intersection of Exchange place at Main and State streets, Paving Extension No. 50. Total amount of bid, \$2,400.15; the items were:

City's portion—Excavation, 131.7 cubic yards, at 95 cents; cement curb, steel reinforced, 6x16 inches, curved, 37.68 linear feet, at \$1.09; 0.6x24 inches, 20 linear feet, at \$1.02; 0.6x16 inches, 7.5 linear feet, at 95 cents; 0.6x24 and 22-inch gutter, 73.5 linear feet, at \$1.36; cement curb, plain, 6x24-

inch, 20 linear feet, at 81 cents; 6x16-inch 25.2 linear feet, 58 cents; 6x24 and 22-inch gutter, 16 linear feet, at \$1.22; 6x24 and 30-inch gutter, 20 linear feet, at \$1.29; 6x18 and 18-inch gutter, 59.16 linear feet, at \$1.02; false curb and 16-inch gutter, 40 linear feet, at 92 cents; resetting and redressing stone curb, 15 linear feet, at 93 cents; 30-inch gutter, 12.5 linear feet, at 76 cents; 20-inch gutter, curved, 42.96 linear feet, at 68 cents; stone curb to be removed and stored, 257 linear feet, at 21 cents; stone blocks to be removed and stored, 272.13 square yards, at 22 cents; asphalt, including foundation, 396.58 square yards, at \$2.55; 4-inch cement sidewalk intersections, 1,401.48 square feet, at 16 cents; waterway with reinforced concrete cover, 161.6 linear feet, at \$2.03; with c.-i. cover, 10.4 linear feet, at \$5.17; furnishing and laying vitrified pipe, 6-inch, 47.5 linear feet, at 27 cents; 8-inch, 20 linear feet, at 44 cents; 8-inch w.l. pipe, 28.3 linear feet, at \$1.81; taking up and resetting stone blocks, 35.56 square yards, at \$2.01; cutting outlet in 4x16-inch cement curb, at \$2.

For curb and gutter extension No. 6 bids were received from Jos. Kennedy Construction Company, \$21,787; P. J. Moran, \$17,723.76. The items of the low bid were:

Abutter's portion, from 11th to 12th, east: Excavation, 12,805 cubic yards, at 50 cents; cement curb, steel reinforced, 6x16-inch, curved, 50.28 linear feet, at \$1.16; 6x16 and 30-inch gutter, 16 linear feet, at \$1.39; cement curb, plain, 6x16 and 30-inch gutter, 1,266 linear feet, at \$1.04; 6x24 and 30-inch gutter, 15 linear feet, at \$1.11; 30-inch gutter, plain, 106.28 linear feet, at 70 cents; 30-inch gutter, curved, 22.78 linear feet, at 83 cents; furnishing and laying vit. pipe, 100 linear feet, at 70 cents; storm water inlet No. 2, at \$13.30; storm water outlet, at \$9.72; removing 8 trees, 6-inch to 1-foot, at \$5.56; 1-foot and over, 3 at \$6.94.

Abutter's portion, from 10th to 11th, east: Excavation, 138.7 cubic yards, at 50 cents; cement curb, steel reinforced, 6x16-inch, curved, 102.18 lin. ft., at \$1.16; 6x16 and 30-inch gutter, 48 lin. ft., at \$1.39; cement curb, plain, 6x16 and 30-inch gutter, 1,041.82 linear feet, at \$1.04; 6x24 and 30-inch gutter, 25 linear feet, at \$1.11; furnishing and laying vit. pipe, 4-inch, 40 linear feet, at 28 cents; 6-inch, 79 linear feet, at 35 cents; 10-inch, 85 linear feet, at 53 cents; 12-inch, 55.27 linear feet, at 70 cents; 30-inch gutter, plain, 347.91 feet, at 70 cents; 1-inch mesh screen for 4-inch pipe, 1 square foot, at \$2.09; two storm water outlets, at \$9.72.

City's portion.—Excavation, 13,676.4 cubic yards, at 50 cents; cement curb, steel reinforced, 6x16-inch, curved, 47.1 linear feet, at \$1.16; cement curb, plain, 6x16 and 30-inch gutter, 350.94 linear feet, at \$1.04; 30-inch gutter, curved, 56.95 linear feet, at 83 cents; 4-inch cement sidewalks, 713.8 square feet, at 16 cents; cement steps, 180 square feet, at 83 cents; cheeks along steps, 61.6 linear feet, at 83 cents; furnishing and laying vit. pipe, 12-inch, 199.73 linear feet, at 70 cents; 10-inch, 30 linear feet, at 59 cents; 6-inch, 21 linear feet, at 35 cents; 1-inch mesh screen for 6-inch pipe, 1 square foot, at \$2.09; 2 storm water inlets No. 3, at \$41.65.

Danville, Va.—City has awarded contract to the Allis-Chalmers Co., Milwaukee, Wis., for equipment to be installed in the municipal electric light plant, including boiler, 500-kw. turbo-generator set, etc.; \$22,000 is appropriated for improvements.—F. Talbot, Supt. of Water, Gas and Electric Light Department.

Richmond, Va.—The Council Committee on water has awarded contracts as follows for new pumping station and electric machinery: To Dimmick Pipe Company, Birmingham, Ala., for c.-i. pipe and special castings for a new force line from the new pump house to the reservoir, \$19,303; Javi Perkins, for brick addition to steam pump house, to house the new electric pumps, equipped with overhead traveling crane, \$6,460; Westinghouse Electric Manufacturing Company, Pittsburg, Pa., for four electric motors, switchboards, transmission line and all electric equipment, \$7,475, and to Dravo-Doyle Company, four centrifugal water pumps, with an estimated capacity of 4,000,000 gallons each daily, \$14,550.

Bellingham, Wash.—The contract for the construction of the Champion street sewer tunnel was awarded on October 27 by the Board of Public Works to Arthur S. Bent, of Los Angeles, Cal., at \$24,356, about \$1,000 below the estimated cost.

Seattle, Wash.—A contract for 21 perfect non-interfering fire alarm boxes was recently awarded to the Gamewell Fire Alarm Telegraph Company, for \$100 each and they are now being delivered.—H. W. Bringham, Chief of Fire Department.

The contract for the improvement of Fourth avenue North by concrete walks was awarded to H. F. Jahn & Co., at \$2,805.50; asphalt paving on Fifteenth avenue Northeast, to Independent Asphalt Company, at \$74,898.25; wood walks on Eighth

avenue, to J. A. Zinkan, at \$1,499.59; thirteen hydrants on Walden street, to International Construction Company, at \$1,221.

Tacoma, Wash.—The Coast Construction Company has secured the contract for water mains in District 534 for \$6,484.

Contract has been awarded by the Commissioner of Public Works for grading South K street from South Fifty-sixth to Sixty-fourth, South Fifty-eighth from K in Fallies addition to K street in Ellsmere's addition, to P. J. Concannon for \$5,500.

Seven bids were received for building curbs and gutters in District No. 659; on Asotin street, from Fortieth to Fifty-sixth streets; Forty-fifth street from Sheridan avenue to Wilkeson; South Forty-sixth from Sheridan avenue to Asotin avenue, and the contract was awarded to Essman & Langberg, whose bid was \$2,730.

Elm Grove, W. Va.—The Building Committee of Council has opened bids for the building of the new city building as follows: E. H. Crockard, \$1,140; James Nickerson, \$1,055; William Stephens, \$1,160; John Ray, \$1,325. William Stephens, being the successful bidder, was awarded the contract and work will be started at once. E. H. Crockard was the designer of the building.

Wellsburg, W. Va.—E. A. Freshwater, Chester, W. Va., and Liggett, Carmen & Co., Wellsburg, have been awarded contracts for paving.—E. A. Sheets, Chairman Street Committee.

Vancouver, B. C., Can.—The Civic Water Committee has received bids as follows for the pipe necessary for the extension of the Seymour Creek mains to Little Mountain and for the city extensions for the year: For the steel mains, including 10,000 feet of 18-inch, 17,000 feet 16-inch, 10,000 feet 18-inch and 1,500 feet heavy 18-inch; Evans, Coleman & Evans, \$70,855 and \$64,155, the prices being on different grades of lapwelded steel; Thomas Piggott, of Glasgow, Scotland, per W. Beverly Robinson, \$59,939 for lapwelded (awarded contract); John Inglis Company, \$96,815 for riveted main; A. J. Forsyth, \$58,151 for riveted main; Munderloh & Co., \$69,835 for lapwelded; Robertson & Godson, \$72,804 and \$72,608, both prices on lapwelded; Vancouver Engineering Works, \$62,850 on riveted and \$69,900 on lapwelded; Robert Ward, \$72,605 on lapwelded; Crane & Co., \$82,295 on Matheson joint pipe; C. Gardiner Johnson & Co., \$79,165 on lapwelded for the c.-i. pipe, 10,000 feet 4-inch, 30,000 feet 6-inch and 10,000 feet 8-inch; Canadian General Electric Company, \$33,320; W. Beverly Robinson, \$30,019; C. W. Stancliffe, \$31,077; C. Gardiner Johnson, \$31,670; A. J. Forsyth, \$29,491; Vancouver Engineering Works, \$31,247; Evans, Coleman & Evans, \$29,862 (awarded contract); Robertson Godson Company, \$30,240.

Winnipeg, Man., Can.—Dobson & Jackson have contract for placing a sewer in Levis street from Chalmers to Stadacona, for \$12,185.—H. N. Ruttan, City Engineer.

INCORPORATIONS

A. M. Blodgett Construction Co., Registered at Chicago, Ill.; general construction work; capital, \$100,000; Missouri incorporation. Incorporators: H. W. Wilder, and others, Chicago.

Brownsville and Williamsburg Water Co., Brownsville, Me.; supply water; capital, \$25,000. Incorporators: President, E. M. Johnston, and Treasurer, M. C. Moran, Brownsville.

Dallas Oil and Gas Co., Dallas, Tex.; to furnish oil and gas for fuel and lighting; capital, \$25,000. Incorporators: R. E. Dodson, John C. Haupt, John Davis, R. T. Meador, John H. Gaston and I. J. Willingham.

Goodwin Sand and Gravel Co., Augusta, Me.; to develop lands for sand and gravel; capital, \$2,500,000. Incorporators: President and Treasurer, I. S. Kearney; Clerk, E. M. Thompson, both of Augusta.

Kezar Falls Water Co., Kezar Falls, Me.; to furnish water; capital, \$50,000. Incorporators: President, Allen Gann, Parsonsfield; Treasurer, E. R. Bacheider, Porter; Clerk, J. Merrill Lord, Parsonsfield.

Municipal Filtration Co., New York, N. Y.; builders, contractors and engineers; capital, \$100,000. Incorporators: William B. Banker, Passaic, N. J.; Charles B. Jarvis, 81 West street; Henry C. Hunter, 30 Church street, both of New York.

Murch Bros. Construction Co., registered at E. St. Louis, Ill.; general contracting and construction work; capital, \$50,000. Missouri corporation. Incorporators: G. F. McNulty, East St. Louis, and others.

Wells Electric Light and Power Co., Wells, Me.; to supply electricity; capital, \$10,000. Incorporators: President, J. W. Gordon; Treasurer, G. G. Hatch; Clerk, J. H. Littlefield, all of Wells.

MUNICIPAL APPLIANCES

Eastman Nozzles

A DELUGE set manufactured by Samuel Eastman and Company, Concord, N. H., was exhibited at the New York State Association of Fire Chiefs at Gloversville last July. The following report was made of the test by Thomas J. O'Connor, Chief Fire and Electric Department, General Electric Company, Schenectady, N. Y.; C. Briggs, Chief Fire Department, Rome, N. Y.; E. J. Cooney, Chief Fire Department, Little Falls, N. Y.; Thomas J. O'Connor, Chairman.

The Eastman Deluge Set was exhibited and demonstrated on the afternoon of June 4. The set was connected to a hydrant by three 150-foot lines of hose, using a 1½-inch deluge nozzle. The stream was the best thrown during the exhibition, it held together well and was of good volume. The stream was thrown a distance of 250 feet against a prevailing wind, 545 gallons of water being delivered per minute, with 60 pounds pressure at the nozzle.

The nozzle was operated on a new platform that was placed in the street on a smooth pavement, the stream being easily directed by one person from the street level to any arc of the circle. The nozzle was left unattended while the stream was flowing at its fullest capacity, the nozzle resting on their new tripod arrangement connected with the holder, demonstrating the fact that all high-pressure streams can be safely left unattended by the use of the nozzle.

We find the Eastman Deluge Set, holders and nozzles are first-class appliances, are constructed on good hydraulic principles in the water way and in the construction of the nozzles; the outfit is light and can be readily carried about. It can be placed in operation wherever lines of hose can be carried. It is a very simple and practical device for harnessing all high-pressure streams. We take pleasure in recommending the Eastman New Nozzle system for all fire service.

The manufacturers claim that the Eastman is the only complete system and that it has the following advantages:

More solid streams are produced, thus reaching a longer distance and being more effective in their work.

The outfits are light, compact and quicker connected than pipes. They are of greater safety to firemen on roofs and ladders and falling walls, and all dangerous situations. Can be set up in alleyways, on roofs or wherever lines of hose can be carried. Can be set up as a water curtain between buildings or as a water battery and left standing alone.

One person can direct any size of stream with one hand under any pressures from the platform, from street level to any arc of the circle in absolute safety. The outfits are insulated with rubber, protecting the firemen from electrocution.

It furnishes a fire escape for firemen in all dangerous places and provides the only practical plan for using controlling and shut-off nozzles.



EASTMAN NOZZLE HOLDER

Lock-Bar Pipe

LOCK-BAR PIPE, made by the East Jersey Pipe Company, 90 West street, New York City, is a steel pipe made, as its name implies, by the use of a special bar at the longitudinal joints of the steel plates from which the pipe is constructed. The peculiar shape of the bar and the method of its use are shown in the accompanying cut. First, the edges of the plates to be joined are upset—that is, thickened by rolling on the edge, so as to give a better grip when the bar is closed over them. The bar itself, seen in cross-section, is H-shaped with heavy sides and rounded corners. The space between the sides is of a width sufficient to allow the thickened edge of the plate to be easily introduced. When this is done the bars are pressed together by a special hydraulic press until the plates and the bar have been brought closely together throughout and an absolutely water-tight joint is formed. The joint so formed is practically a cold weld and is stronger than the rest of the pipe, as has been demonstrated by tests, in which, when sections of pipe have been subjected to hydraulic pressure, the steel plate ruptured, before the joint would give way.

Joints between the individual pipes are formed in four different ways. In the illustration one end of the pipe is made of less diameter than the other so that the small end of one pipe is inserted into the large end of the other, and the joint is riveted. In another style the pipe is of uniform diameter throughout and a butt strap joint is made, as in ordinary boiler practice. A special sleeve joint is also made with a gasket and lead filler. This joint allows for expansion and contraction. A riveted flange joint is also sometimes used.

The advantages claimed for Lock-Bar steel pipe are that it is cheaper than cast-iron pipe in the large sizes and that it has greater strength due to flexibility and elasticity. Steel pipe, like cast-iron, is preserved from corrosion by a coating of asphalt or tar applied hot. Lock-bar pipe is made in 30-foot lengths, thus reducing the number of end joints as compared with cast-iron, joints being the weak points of all pipe lines. The difference in weight of steel and iron pipe is, of course, greatly in favor of steel, an important matter where transportation charges are unusually high. Ordinary steel pipe is from 50 to 75 per cent. lighter than cast-iron pipe of equal strength and Lock-Bar pipe is 30 to 50 per cent. lighter than riveted pipe of equal strength.

Lock-Bar pipe has recently been chosen for three large installations, namely, the conduit for the Montreal, Canada, water

works; the pipe line for the new Springfield, Mass., project and the big pipe line from Clearstream to Amityville, L. I., a distance of 16 miles. The last-mentioned piece of work has until recently been held up in the courts on a taxpayers' suit claiming that the city had no right to use a patented material. The court held that, as bids for competitive materials were received, the city was acting within its authority.

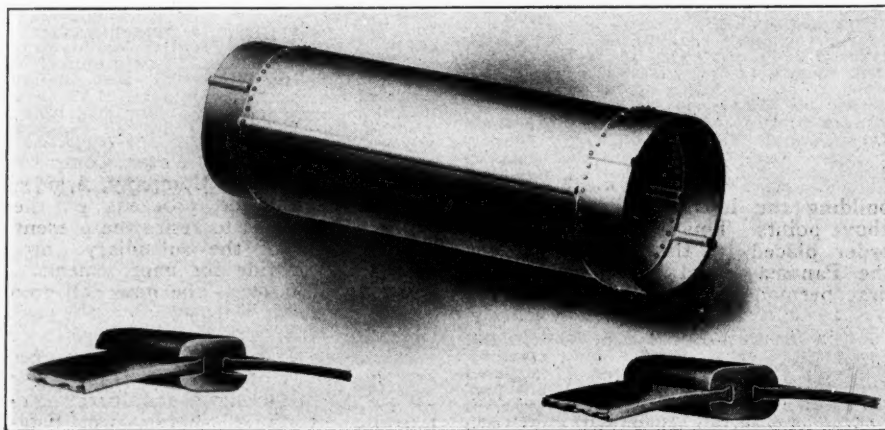
TRADE NOTES

Cast-iron Pipe.—Chicago: Business consists of routine orders of about the same amount as in few preceding weeks. Quotations: 4-inch, \$27; 6 to 12-inch, \$26; 16-inch and up, \$25. Birmingham: Market is more active and there is less shading of quoted prices on large orders. Quotations: 4 to 6-inch, \$24; 8 to 12-inch, \$23; over 12-inch, \$22.

Lead.—The demand is moderate. Metal Exchange quotations, 4.37½c. to 4.40c. American Smelting and Refining Co.'s price, 4.30c. St. Louis, 4.275c. to 4.30c. London, Spanish £13 12s. 6d.; soft English, £14 7s. 6d.

Service Boxes.—The Globe Foundry Company, Port Chester, N. Y., manufactures service and stop cock boxes, soil pipe and fittings, lamp posts and manhole covers. The Globe adjustable stop cock boxes are simple in construction and substantially made. They are easily adjusted to the depth of the bench by screwing or unscrewing the top section to conform with the grade, and all parts are interchangeable. When hot they are dipped in coal tar to preserve them from rust. The heads are made either round or square. Extension meter boxes are also made, with screw lock covers, suitable for covering ½ and ¾-inch water meters. The smallest diameter is 7¼ inches.

Spiral Pipe.—The American Spiral Pipe Works, Chicago, Ill., has published an illustrated catalogue and price list No. 5, which contains eighty pages of interesting information for pipe users. A number of photographs of large installations of long water supply lines and exhaust steam piping equipment are given. Among the special features of this catalogue are the blue print profiles and maps of pipe lines recently installed for large mines and hydroelectric power plants and water supply lines for municipalities. The price lists and dimensions of various products are arranged in a complete and concise manner. A list of many of the large firms using spiral pipe is added.



DETAILS OF LOCK-BAR STEEL TYPE

Subterranean Cement Work.—Consul George H. Scidmore, of Nagasaki, has forwarded to the Bureau of Manufactures, Washington, D. C., a pamphlet, printed in English, issued by a Japanese company, which describes the use and importance of volcanic ash in combination with Portland cement, especially for construction work in salt water. The advantages claimed for this volcanic ash are that in combination with Portland cement it gives a greater tensile strength than cement mortar alone. It is also claimed that the mortar is denser than cement mortar, and does not permit the percolation of water, thus obviating the injurious action of sea-water salts. This density gives it a superior quality for construction of water reservoirs and reinforced concrete for the protection of iron from oxidation. The Consul adds that should the correctness of the Japanese company's claims be proved by trial, it is highly probable that the enormous volcanic resources of the Philippines will provide for a new and profitable industry.

New Telephone System.—Announcement of a gigantic long distance independent telephone and telegraph system in opposition to the Bell telephone interest has been made by James B. Hoge, Toledo, O., secretary United States Telephone Company. A syndicate of capitalists of the East and St. Louis has been at work on the enterprise for a year, says Mr. Hoge. The men behind it plan with the assistance of the local telephone companies to spread a new system all over the United States to give long distance service. Mr. Hoge announces that the incorporation of the holding company would be made in a week or so with a \$10,000,000 capital stock. "The new system will fill up long distance gaps from Cleveland to Philadelphia and St. Louis to St. Paul. It is proposed to do general telegraph business over the same lines. We will operate not only in the eastern half of the continent, but the West as well. The capital is all to come from a syndicate composed of Eastern and St. Louis capitalists," says Mr. Hoge.

New Paving Proposition.—The New Orleans Paving and Roofing Company, 313 Macheca Building, New Orleans, La., has been organized for the purpose of making paving blocks from the garbage and other refuse now being thrown into the river. The pavement is described as having the hardness and consistency of granite, as well as the smoothness of asphalt. The company expects to do a large business.

Big Boiler Contract.—E. Keeler Company, Williamsport, Pa., have just been awarded a large contract consisting of 12 410-horsepower Keeler water tube boilers, by the Isthmian Canal Commission. These boilers will be used in two plants, one of these being situated at Gatun, and the other at Miraflores, on the line of the Panama Canal. They will be used to operate the cableways and other machinery for building the locks and dams at the above points. This is the largest boiler order placed by the government for the Panama Canal work, and is the first permanent plant to be installed on the isthmus. The boilers will be used in the permanent operation of the canal after the construction is finished. All of the prominent boiler makers in the country were bidding for this work, and a very thorough investigation was made, both of plants in service and the shops of the different companies, by prominent officials of the government.

Dock Project.—Behind the incorporation in New York last week of the Realty Improvement and Dock Company is reported to be another colossal financial deal involving the commercial development of San Francisco. While the identity of the principals in the transaction is not disclosed by names of the actual incorporators, this company is the vehicle for these undertakings:

First—The pooling of the large real estate holdings of Herbert E. and Hartland Law and Mrs. W. K. Vanderbilt, Jr., on the San Francisco water front between Fort Mason and Harbor View. These two holdings comprise what was originally the sole property of the Fair estate.

Second—The building of an elaborate system of modern docks and piers, capable of accommodating the largest vessels in the world, at an initial cost of about \$3,000,000.

Third—The establishing in conjunction with the Southern Pacific Company, of a terminal system of freight handling which will connect docks with Harriman system.

High Pressure Pumps.—The Byron Jackson Iron Works, San Francisco, Cal., have sent a letter to the Board of Public Works claiming that the specifications for steam turbines and pumps had been inadvertently so prepared as to shut out local bidders. The point raised was that bids were asked for pumps and steam turbines together, thus shutting out all pump manufacturers who did not make steam turbines. The pumps, which will cost \$100,000, can, it is claimed, be supplied by local manufacturers. Among the local manufacturers who appeared before the Board were W. E. Boyer, representing the Byron Jackson Machine Works; W. A. Doble, of the Abner Doble Company, and J. W. Kerr, of the Metal Trades Association; John W. Sweeney, John I. Nolan and W. R. Hegarty, of the Iron Trades Council, also spoke in favor of amending the specifications to keep the work on this Coast. H. A. Russell, of the General Electric Company, and a representative of the Allis-Chalmers Company denied that their companies had not dealt fairly with the local pump men.

Water Company Consolidation.—The Springfield Consolidated Water Co. of Pennsylvania has given the Columbia Avenue Trust Co. as trustee a mortgage for \$25,000,000 to secure a bond issue for that amount. The bonds to be issued under the new mortgage are to bear 5 per cent. interest and run 50 years, with a sinking fund provision to retire them in that period. Mr. John K. Cuning, president of the Trust Company, states that the mortgage was a step in the merging of all the water companies controlled by the American Pipe Manufacturing Company. There are properties in Bucks, Philadelphia, Delaware, Chester and Montgomery counties involved in the plan. The Springfield Consolidated Water Company is a new holding company for a large number of smaller companies. Among these are the Springfield Water Company, North Springfield Water Company, Springfield Consolidated Water Company, Bryn Mawr Water Company, Eddystone Water Company and Berwyn Water Company, besides many others. The proceeds of the bonds will be used to retire the present bonded debt of the subsidiary companies and provide for improvements.

Gasoline Engine.—The new Scherzer bascule span at Cleveland, O., across the channel of the Cuyahoga river is operated ordinarily by two direct current electric motors of 50 horsepower each. As an auxiliary, should the current be cut off, a 9-horsepower Fairbanks-Morse gasoline engine has been installed. The gasoline engine will lift the bridge in twelve minutes.

PROPOSALS

REINFORCED CONCRETE CONDUIT

Reading, Pa.
Sealed proposals will be received by the Board of Water Commissioners before 7:30 o'clock P.M., November 24, 1908, for building about 8,000 feet of 60-inch reinforced concrete conduit and appurtenances for raw water for Maiden Creek sand filters. Plans, specifications and proposal blanks can be had from the Superintendent and Engineer, Emil L. Nuebling, at 25 N. 11th street, by depositing the sum of \$5. The right is reserved to reject any or all proposals.

EDWARD ELBERT,
President.

Attest:
LINCOLN S. RAMSEY,
Secretary.

(20-21)

GAS PLANT FOR SALE

Newbern, N. C.

Notice is hereby given that the property of the Newbern Lighting and Fuel Company at Newbern, N. C., being the gas plant, including the real estate, plant, fixtures and franchises, and all other property belonging to the Newbern Lighting and Fuel Company, will be sold to the highest bidder for cash at the hour of 12 o'clock M. on the 23d day of November, 1908, at the Court House door in Newbern, N. C., by the Receiver of the Newbern Lighting and Fuel Company, under the order of the Court made in that certain action, entitled "J. M. Cox against Newbern Lighting and Fuel Company," in the Superior Court of Craven County, N. C.

GEO. A. NICOLL,
Receiver Newbern Lighting and Fuel Company.
Newbern, N. C.

WATER WORKS

Yorkville, Ill.

Sealed bids will be received by the Village Board of Yorkville, Ill., until 8 o'clock P.M., December 1, 1908, for the construction of a concrete reservoir.

15-horsepower gasoline engine.
250-gallon-per-minute rotary pump.
5,915 feet 6-inch c.-l. pipe, laid.
Pump house.
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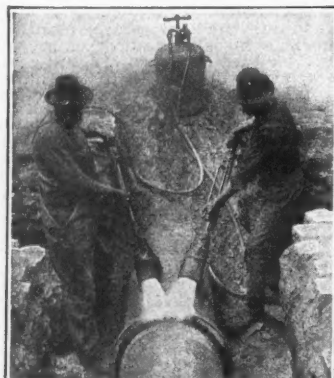
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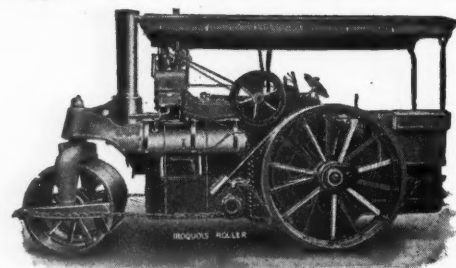
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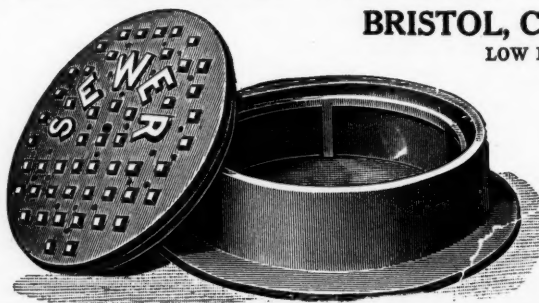
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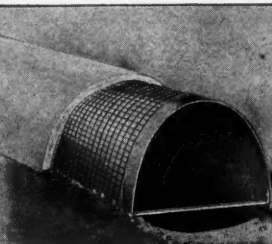
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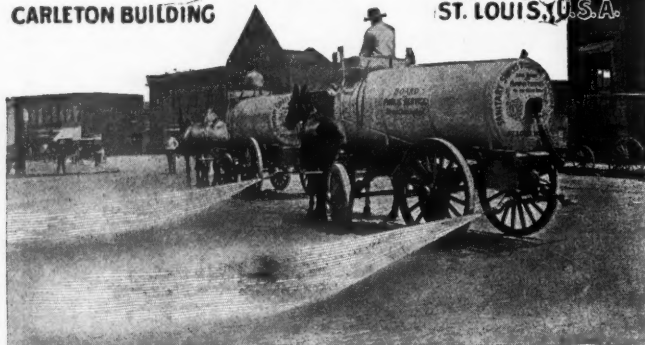
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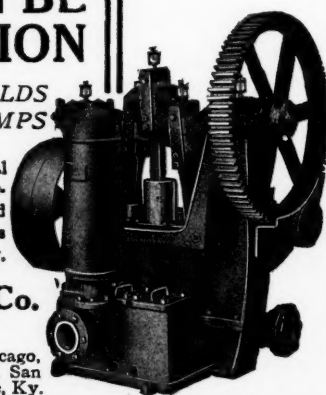
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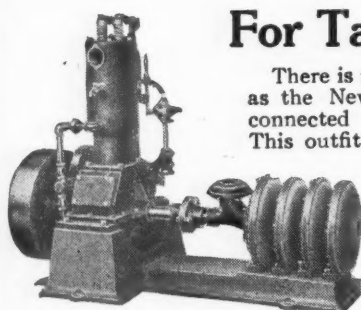
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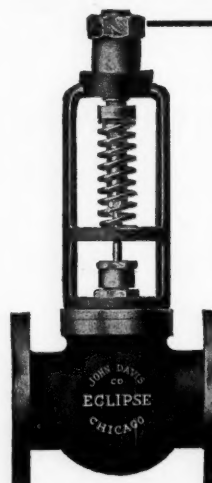
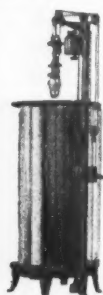
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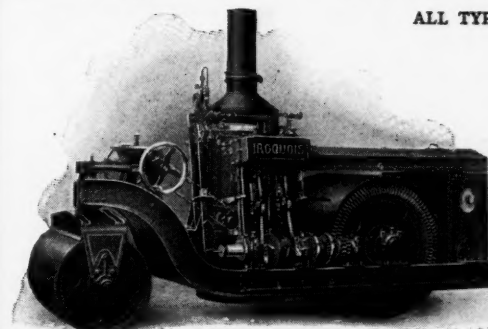


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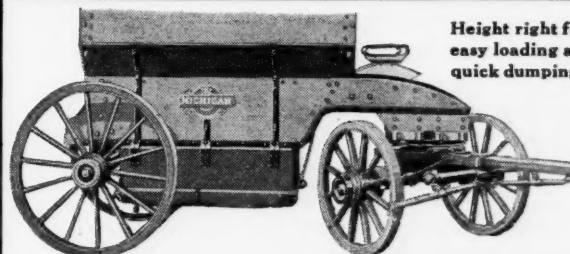
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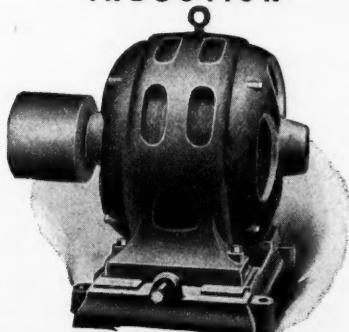
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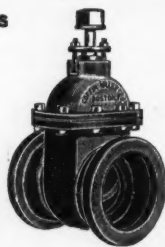


Fig. 210
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Fig. 41
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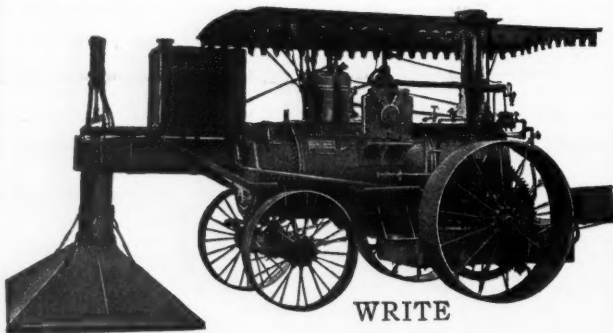
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